International Boundary and Water Commission
United States Section

For immediate release
February 11, 2025

USIBWC PLANS MIDDLE RIO GRANDE STAKEHOLDER MEETINGS

The U.S. Section of the International Boundary and Water Commission (USIBWC) will host in-person and virtual public meetings in the Middle Rio Grande region on February 19 and 20, 2025.

Presenters will cover the Amistad Dam mitigation plan, the Safety of Dams program, ongoing and upcoming area operations, and an update on Rio Grande hydrology, water deliveries, and Minute 331

The **first meeting** will be in person at the Municipal Building, 109 W Broadway St., Del Rio, Texas, on **Wednesday, February 19, from 2-5 p.m. CST**.

For those wishing to join this meeting virtually, click this Microsoft Teams link.
Meeting ID: 299 339 064 04
Passcode: cg2oB2NM
Or join by phone:
+1 915-320-4718,,500135737# United States, El Paso, or Find a local number
Phone conference ID: 500 135 737#

A **tour of Amistad Dam** will be offered on Wednesday, February 19, from 10 a.m.-12 p.m. CST. Registration is limited to only 20 people. If you are interested in this tour, contact Public Affairs Officer Frankie Pinon at frankie.pinon@ibwc.gov.

The **second meeting** will be in person at the Laredo Water Museum, 2702 Anna Ave., Laredo, Texas, on **Thursday, February 20, from 9 a.m.–12 p.m. CST**.

For those wishing to join this meeting virtually, click this Microsoft Teams link.
Meeting ID: 234 243 462 351
Passcode: fn7wd6NR
Or join by phone:
+1 915-320-4718,,593663534# United States, El Paso, or Find a local number
Phone conference ID: 593 663 534#

If possible, it may be helpful for you to test connectivity on your own prior to the meeting by clicking on the link and ensuring your camera and microphone are functioning.

MIDDLE RIO GRANDE STAKEHOLDER MEETINGS

Amistad Dam, Wednesday, February 19, from 2-5 p.m. CST.
Laredo Water Museum, Thursday, February 20, from 9 a.m.-12 p.m. CST.

And Via Microsoft Teams

Agenda

• Welcome and Introductions – USIBWC **Commissioner Dr. Maria-Elena Giner, P.E.**

• **Karla Benitez, USIBWC Civil Engineer**: Amistad Dam mitigation plan.

• **Delbert Humberson, USIBWC Hydrologist**: Update on Rio Grande hydrology, water deliveries, and Minute 331.

• **Mario Gomez, USIBWC Acting Operation and Maintenance Chief**: Updates to the Safety of Dams program and ongoing and upcoming area operations activities.

For more information:
Frankie Pinon
frankie.pinon@ibwc.gov
915-832-4716

Sign up for USIBWC Announcements:

INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES SECTION

Middle Rio Grande Stakeholders Meeting

Public Forum

February 2025

Amistad Dam Safety Mitigation Plan

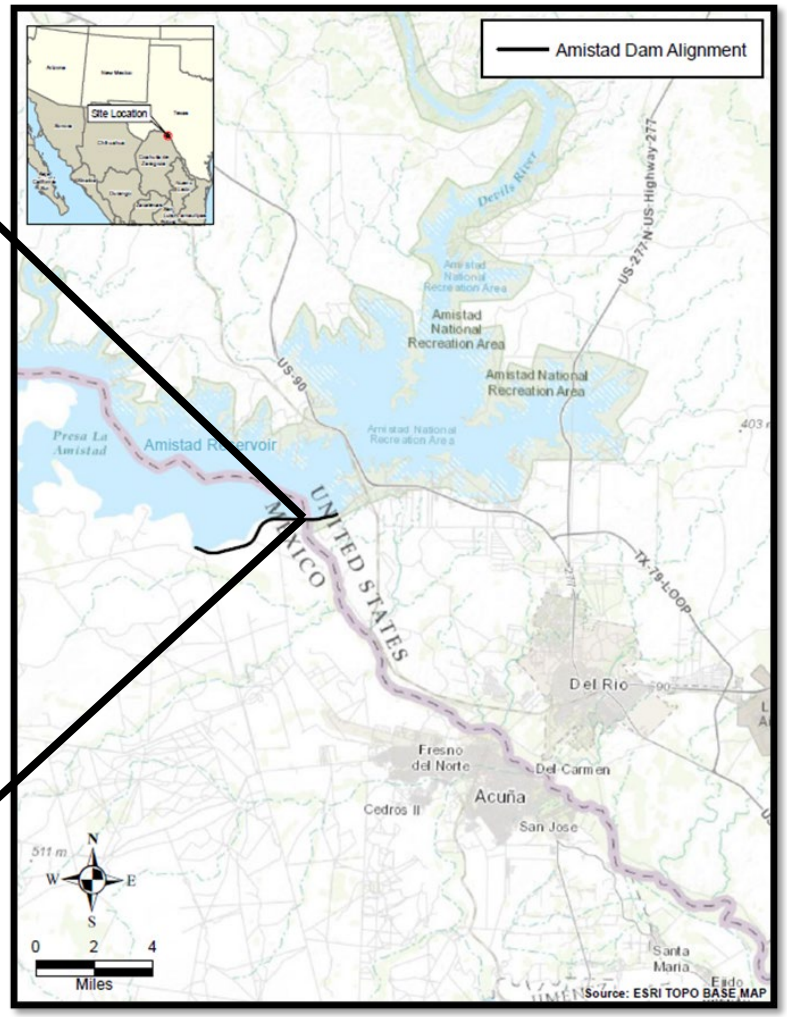
Karla Benitez

Civil Engineer

OVERVIEW

- Located on the Rio Grande 11.81 miles (19 kilometers) north of the cities of Del Rio, Texas and Ciudad Acuña, Coahuila.
- Second international storage dam built jointly by the United States and Mexico, pursuant to the 1944 Water Treaty.
- Construction began in 1963 and was completed in 1969.
- Includes Ports of Entry for both the U.S. and Mexico and is co-owned and co-operated by the U.S. and Mexico.
- The total length of the damming surface is approximately 32,200 feet (6 Miles; 9,815 meters), approximately 1.81 miles (2,922 m) in the U.S. and 4.23 miles (6,811 m) in Mexico
- Reservoir capacity is 5.3 Million acre-ft (11th largest in the US).

AMISTAD DAM



AMISTAD DAM TIMELINE OF EVENTS

Project Milestone	Commenced	Completed
Minute 210	---	1961
Construction of the dam	1963	1969
Minute 235	---	1969
Deliberate impoundment to conservation pool	1969	1972
Construction of the hydropower facilities	1980	1983
Severe drought period, which led to discovery of numerous upstream sinkholes	1994	2004
Circular depression found and backfilled on Mexican embankment near station 7+000	---	1996
Remedial centerline grouting plus supplemental upstream Toe grouting on the Mexican embankment	1995	1998

1961
Minute 210

LATE 1960S - EARLY 1970'S

Pre- 1963
Existing Springs and Sinkholes near future dam site

1963
Construction of Amistad Dam Begins

Caverns and voids found in foundation

Caverns and voids were excavated and grouted

1968
First Impoundment of Water at Amistad

1969
Minute 235

1969
Construction Completed on Amistad Dam

1968 – 1970s
Seepage breakouts occurring downstream of Dam.

EARLY 1990'S

1973
French Drain installed at V-4 to intercept seepage

1987 – 1993
Study shows water at V4 and upstream Buoy #1 are closely related in water quality.

1993
Sand observed in Carmina Springs in October 1993. Unknown duration of flow and quantity. Suspended solids observed in seep MS-13F

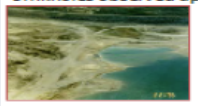
1994
Occurrence of a sinkhole in the reservoir basin is first discovered

Sinkhole #1

1994
Pool Receded to El. 328. Numerous sinkholes observed in October-Dec 1994 - upstream of Dam.

MID TO LATE 1990'S

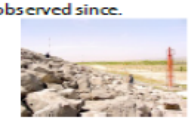
Late 1994 - 1995
Pool recedes to El. 328, November 1994 to January 1995 10 more sinkholes observed upstream of dam.



1995
Dye testing conducted. Confirmed upstream to downstream connection. Velocities calculated at 0.01 m/s to 0.04 m/s.

Aug 1995
Grouting program begins between stations 6+850 and 7+450 meters. Noted that dam in this section appears to be founded on Marl. Systematic sinkhole filling program started.

June 1996
Two additional sinkholes discovered. Potential area of movement in upstream riprap discovered. Riprap added and no movement has been observed since.

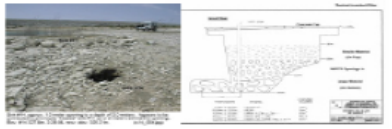


AMISTAD DAM TIMELINE OF EVENTS

Project Milestone	Commenced	Completed
US Geological Survey (USGS) investigations: surface geophysics plus monitoring well installation	2005	2006
Periodic inspection leading to joint technical advisor group formation	---	2007
Rated DSAC II	---	2007
Interim Risk Reduction Measures (IRRMs) implemented	2007	2011
Expert Panel Review of Amistad Dam Document	2008	2009 revised 2011
Quantitative Risk Assessments	2010	2016
AECOM Investigation – Geophysical survey, dye-testing survey, drilling, observation well installation, and automated instrumentation system installation.	2015	2016
Dam Safety Modification Report written	2012	2019

LATE 1990'S TO 2000'S

1997
Five more sinkholes observed



1998
Upstream grouting program performed along upstream toe. No change to downstream seepage seen.

1994 to 2003
Dry period. No flow from V-4. Sinkholes form in mid 1990s to early 2000s

2003 to 2007
A period of continued monitoring. No new sinkholes from 2002 to 2006.

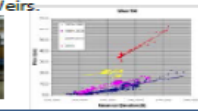
LATE 2000'S

2007
Technical Advisors to Commission concluded Dam is potentially unsafe. Classified Dam as a DSAC II and recommended that Panel of Consultants evaluate the Dam.

2008
June 2008, IBWC establishes Joint Panel of Experts to Evaluate Amistad Dam

2009
Oct 2009, Report released documenting results of the Joint Panel of Experts and Consultants review of Dam. Failure Modes were listed. Report support DSAC II rating. Recommends DSMS and Quantitative Risk Assessment additional investigations, IRRMs and consequence analysis.

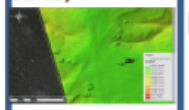
Nov 2009 - 2010
Joint Panel of Experts kicks off Risk Analysis of Amistad. Seepage trend analysis shows increasing seepage rates at V-4 and Carmina Weirs.



2010'S

Apr 2011
Risk Analysis Report is released indicating that Amistad Dam is a high risk dam. Presented baseline risk estimates.

Sept- Nov 2011
DSMS Begins. Bathometric Survey



2012-2013
Water levels decrease and additional sinkholes form. Alternative formulation and screening begins.

2014-2015
Decision to complete an Investigation. Geotechnical investigations was conducted and additional instrumentation installed..

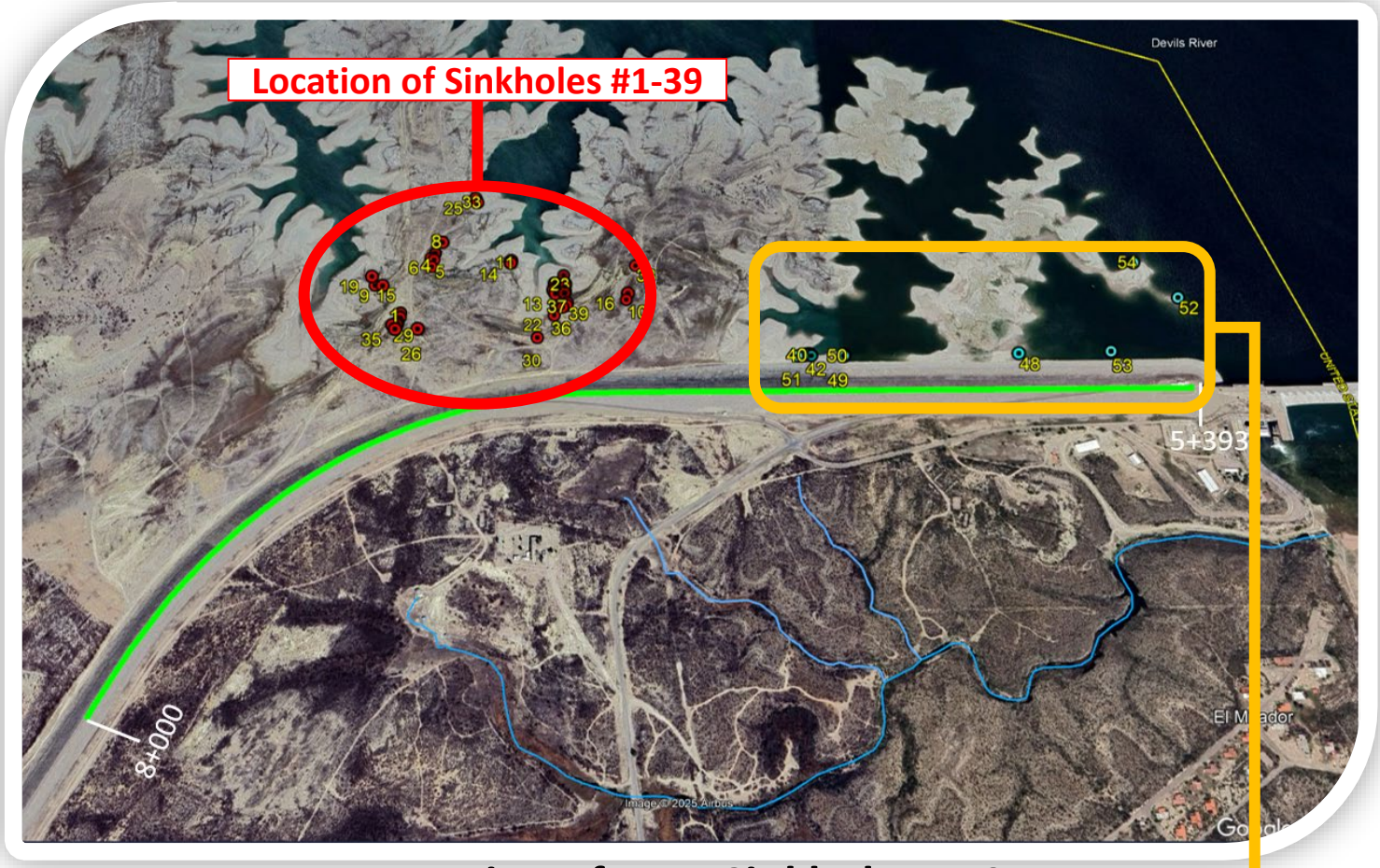
2016 - 2017
QRA of final alternatives. Conducted. ECRA and Final Draft DSMS completed.

Sinkhole Map at Amistad Dam 1994 – 2023 (#1 thru 39)

SINKHOLE: Cavity in the ground, especially in limestone bedrock, caused by dissolution and providing a route for surface water to disappear underground

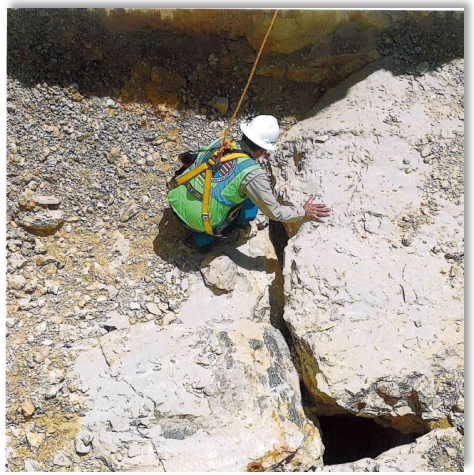
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002-2011	2012	2013	2014	2015	2016-2019	2020	2021-2022	2023	29 YRS
Sinkholes	10	1	2	5	1	0	2	4	0	5	3	1	1	0	1	0	3	39

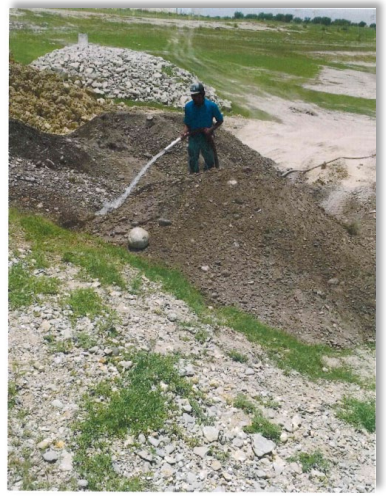
16 additional sinkholes found in 2024



Year	1994	1995	1996	1997	1998	1999	2000	2001	2002-2011	2012	2013	2014	2015	2016-2019	2020	2021-2022	2023	2024	30 YRS
Sinkholes	10	1	2	5	1	0	2	4	0	5	3	1	1	0	1	0	3	16	55

Sinkhole Treatment

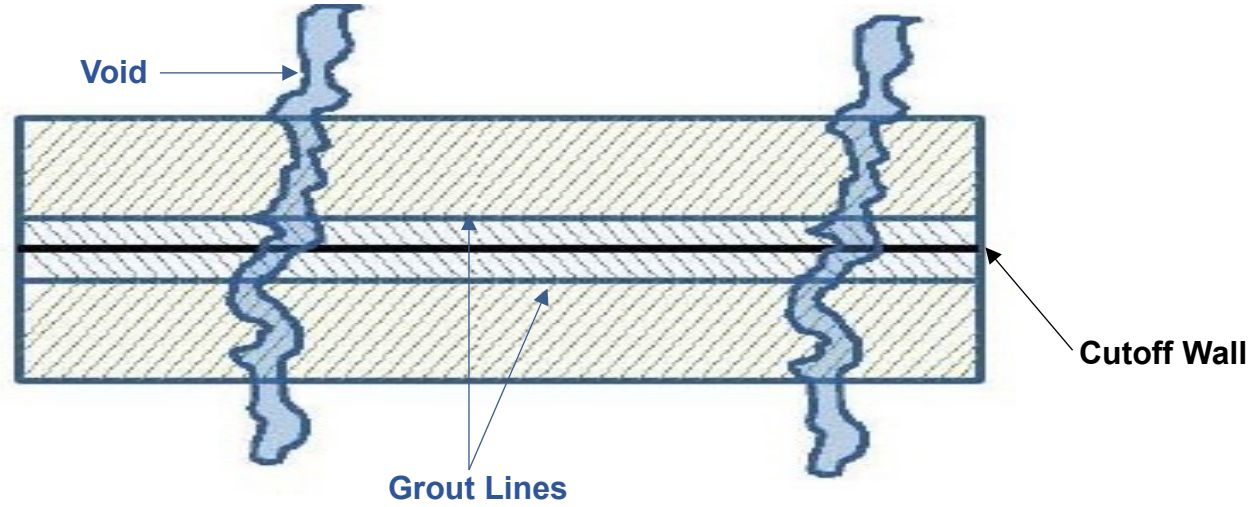




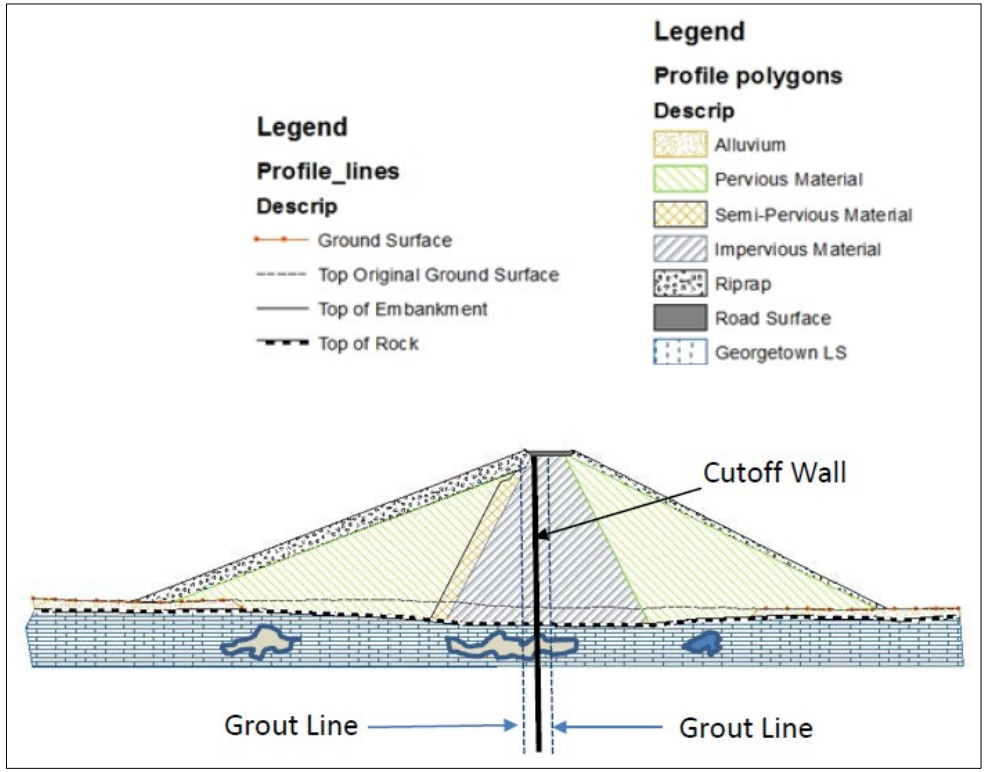
ISSUES

- Sinkholes have potential to endanger the dam
- Potential risk to the structure's stability
- Categorized Class II DSAC*
- Flooding
- Water supply, recreation, hydropower, and fish and wildlife would be affected

**DSAC = Dam Safety Action Classification*



SOLUTION APPROACH

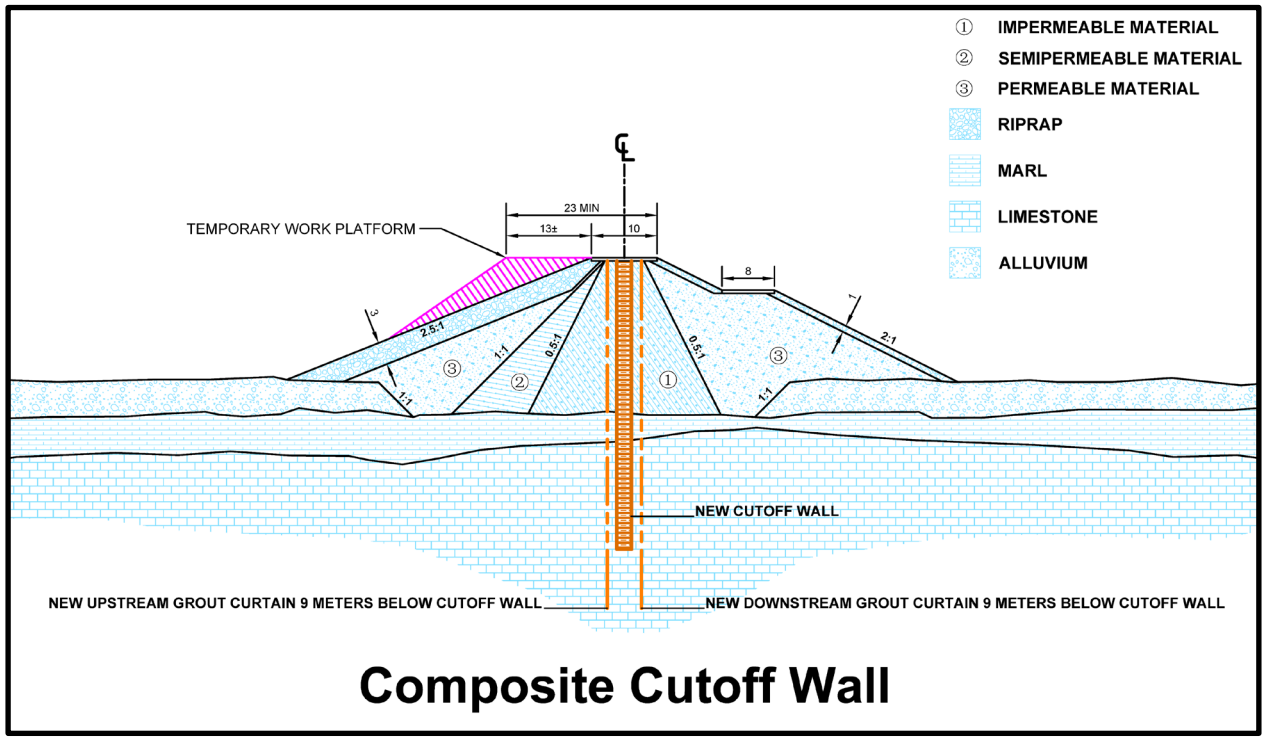


Composite Cutoff Wall

(Dam Safety Modification Report, 2020)

Two-line grout curtain + concrete cutoff wall

✓ Meets all tolerable risk guidelines



Composite Cutoff Wall

- Composite cutoff wall works by cutting off flow under the dam
- Reduces the risk of failure to a tolerable level
- Construction of cutoff wall requires a temporary work platform and a bypass road

COMPOSITE CUTOFF WALL

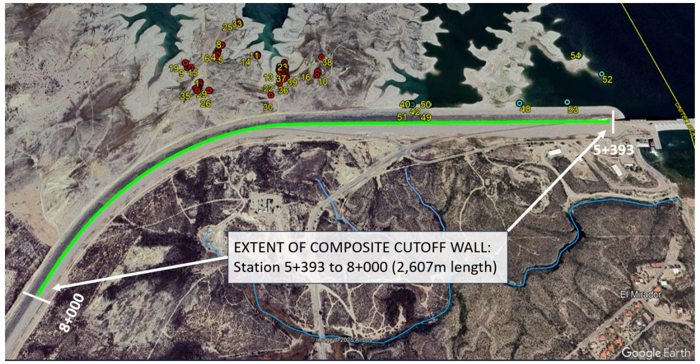
Two-line Grout curtain (Upstream and Downstream)

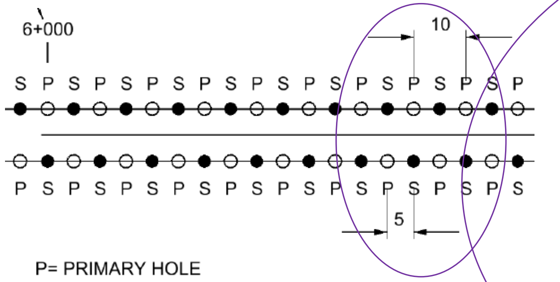
- ➢ Two parallel lines of holes, drilled from the crest, backfilled with pressurized cement grout
- Fills cavities in the karstic bedrock
- Allows for refinement of the concrete cutoff wall depths and lateral extents
- Reduces flow in the bedrock
- Creates exploration profiles of the dam to characterize the rock
- Serves as a guide to design the future cutoff wall.

Concrete Cutoff wall

- Series of panels excavated from the crest between the two grout curtains
- Constructed in primary and secondary sequence
- Allows for blockage of water flow through the rock foundation

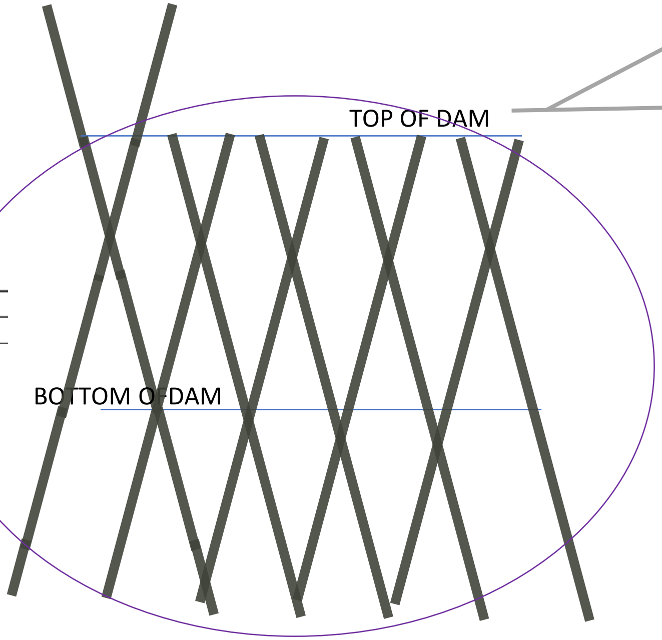
Composite Cutoff Wall



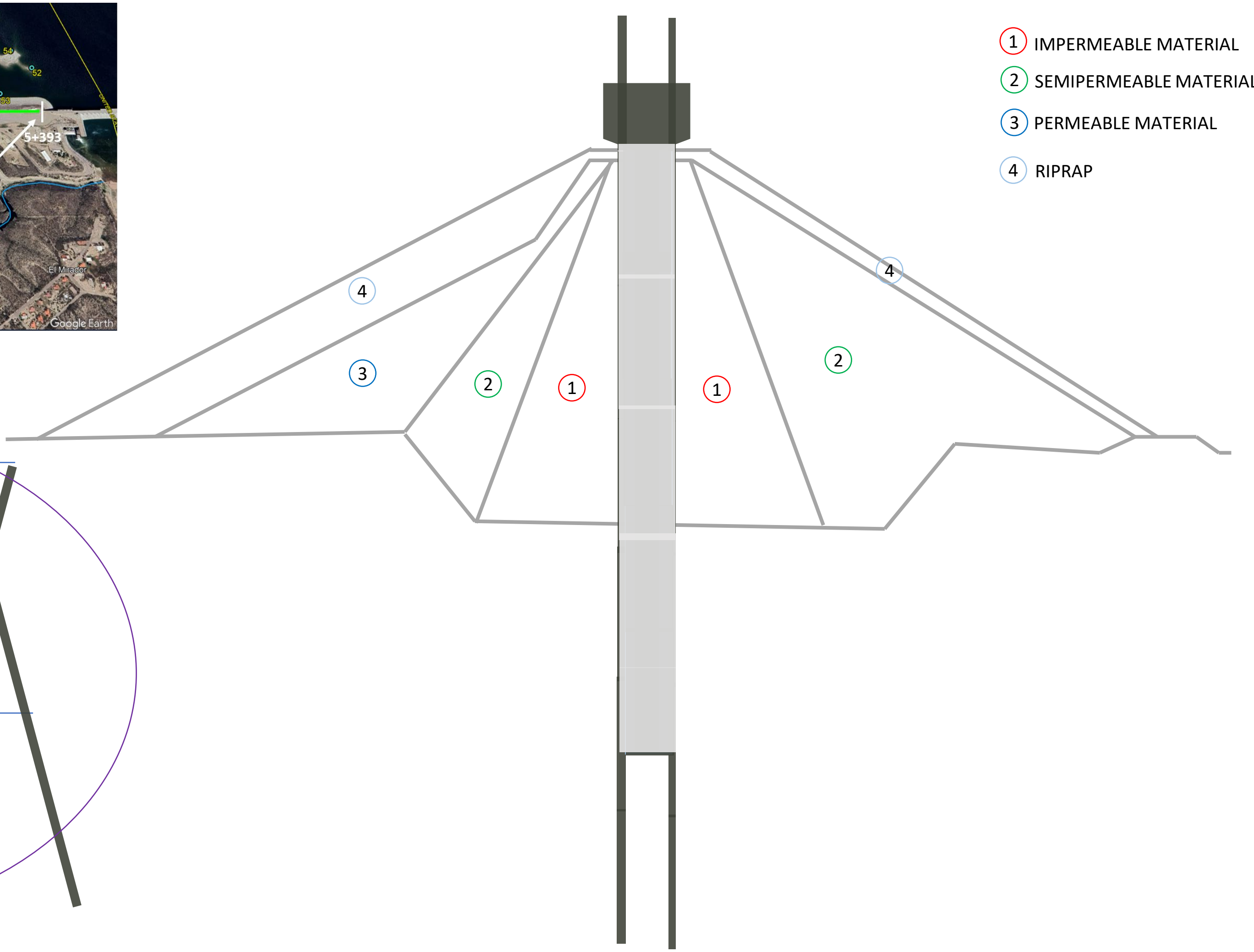


P= PRIMARY HOLE

S= SECONDARY HOLE



PROFILE



Minute 332

- Signed on December 10, 2024
- Share total cost in accordance with Minutes 210 and 235
  - o 56.2% for the United States
  - o 43.8% for Mexico

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

MINUTE NO. 332

El Paso, Texas
December 10, 2024

CONSTRUCTION OF A COMPOSITE CUTOFF WALL TO REDUCE THE RISK OF FAILURE AT AMISTAD INTERNATIONAL DAM

The Commission met at the United States Section Headquarters Office in El Paso, Texas at 3:30 p.m. on December 10, 2024 to review the conclusions and recommendations developed by the Principal Engineers based on those presented by the Technical Advisors from the United States and Mexico, regarding structural safety measures that must be implemented to reduce the risk of failure at Amistad International Dam due to the presence of sinkholes and seepage.

The Commissioners referred to Article 5 of the "United States-Mexico Treaty for Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande," dated February 3, 1944, which stipulates, "The cost of construction, operation and maintenance of each of the international storage dams shall be prorated between the two Governments in proportion to the capacity allotted to each country for conservation purposes in the reservoir at such dam."

The Commissioners also observed that in Resolution 2(b) of Commission Minute 210, entitled "Recommendations Regarding Construction of Amistad Dam," signed January 12, 1961, the Governments of the United States and Mexico agreed that the distribution of the cost of construction of Amistad International Dam would be made based on the proportions "...56.2 per cent to the United States and 43.8 per cent to Mexico..."

The Commissioners also referred to Commission Minute 235, entitled "Division of Operation and Maintenance Costs of Amistad Dam," signed December 3, 1969, taking note that the "Joint Report of the Principal Engineers Concerning the Division of Operation and Maintenance Costs of Amistad Dam," signed December 1, 1969, which forms an integral part of that Minute, stipulates: "Should it become necessary to perform operation, maintenance, or repair work of an extraordinary or emergency nature which, if not performed promptly might result in risk of serious damage to the project, or in increased cost of its performance, the Commission shall order those works executed which it finds advisable and shall allocate them between the two countries for their performance as soon as possible, understanding that the performance by each Government of the work allotted to it, cannot be undertaken until it has made the necessary financing arrangements therefor."

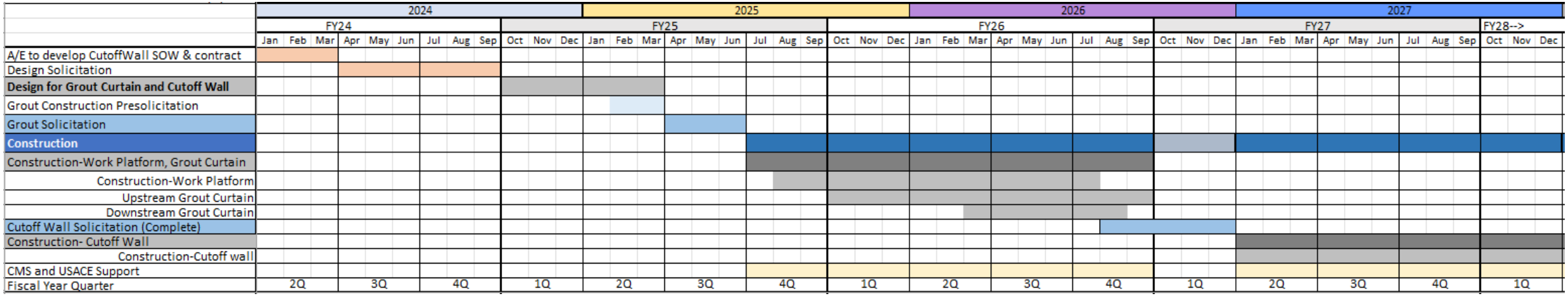
Furthermore, the Commissioners reviewed and found satisfactory the "Joint Report of the Principal Engineers on the Implementation of Corrective Measures to Reduce the Risk of Failure at Amistad Dam through the Construction of a Composite

PRELIMINARY PROJECT SCHEDULE - Tentative and subject to change

- ✓ Bidding documentation & SOW for Design development– January 2024
- ✓ Solicitation of Design contract posted – May 16, 2024
- ✓ Design Award – September 17, 2024
- • Grout Curtain Construction & Cutoff Wall Design - July 2025
- • Cutoff Wall Construction (Est.) – January 2027**

**Subject to availability of funding

US and Mexican dam safety experts (USACE/CONAGUA) involved in the development of documents and technical reviews



RECOMMENDATIONS/PATH FORWARD

- Complete Design***
- Commence Grouting construction with existing funds
- Secure additional funds for total project as soon as practical
- Commence Cutoff Wall construction as soon as practical, depending on contract method and funding, to ensure that the complete composite cutoff wall alternative will be constructed
- Continue routine monitoring programs of the dam's automated and conventional instrumentation
- Continue binational data exchange
- Update and maintain list of the officials identified in the Amistad Dam Emergency Action Plan

*** FACTORS IMPACTING COST

- Required Depth of Grout Curtains
- Required Depth of Cutoff Wall
- Starting and Ending Limits

Questions and Discussion

International Boundary and Water Commission
U.S. Section
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El Paso, Texas 79902
Follow us on Twitter @usibwc

INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES SECTION

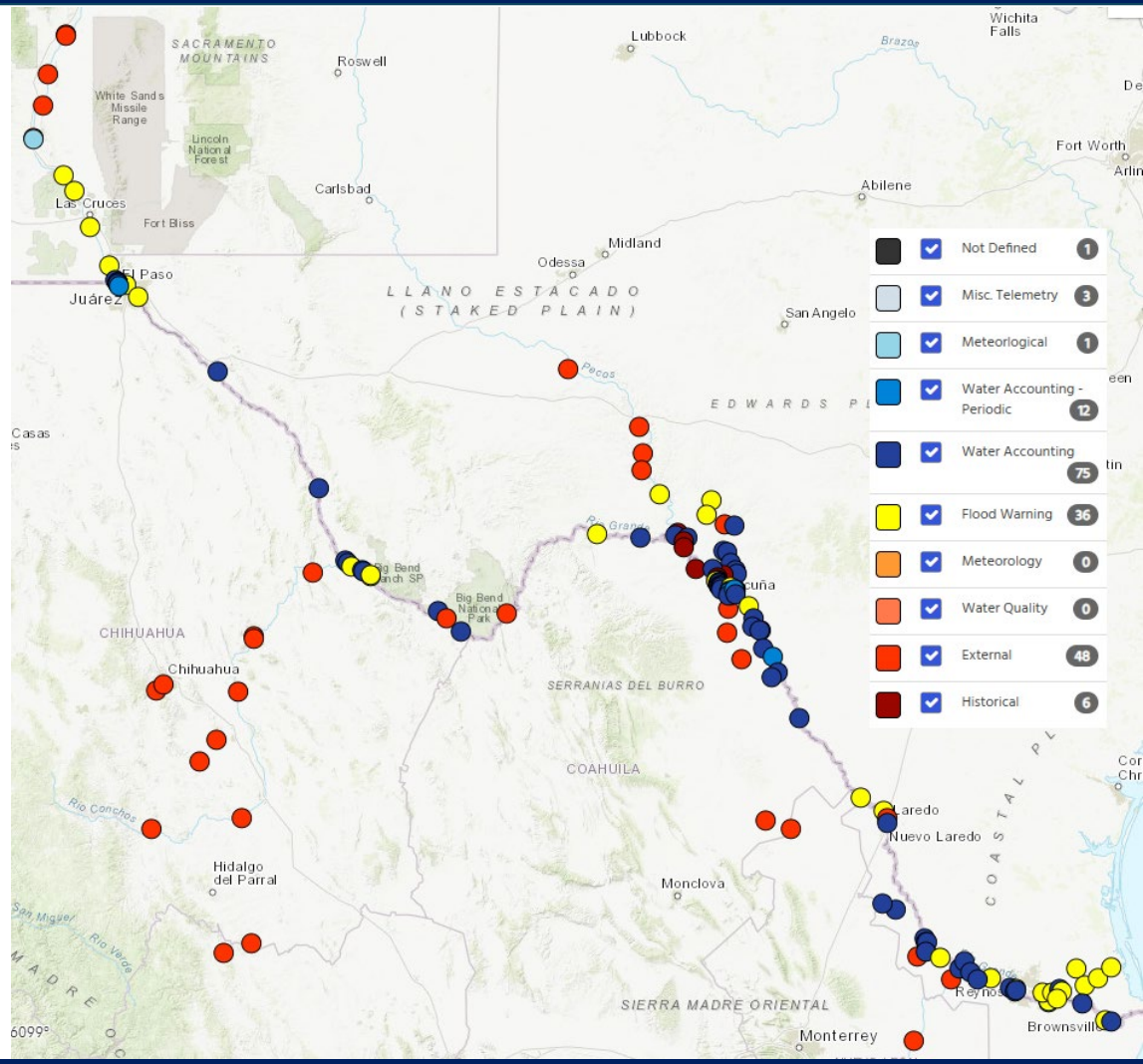
Update on Hydrology of the Rio Grande, Water Deliveries, and Minute 331

Dr. Maria-Elena Giner, P.E.
Commissioner U.S. Section

Adrian Cortez - Lead Hydrologist
Delbert Humberson - Hydrologist

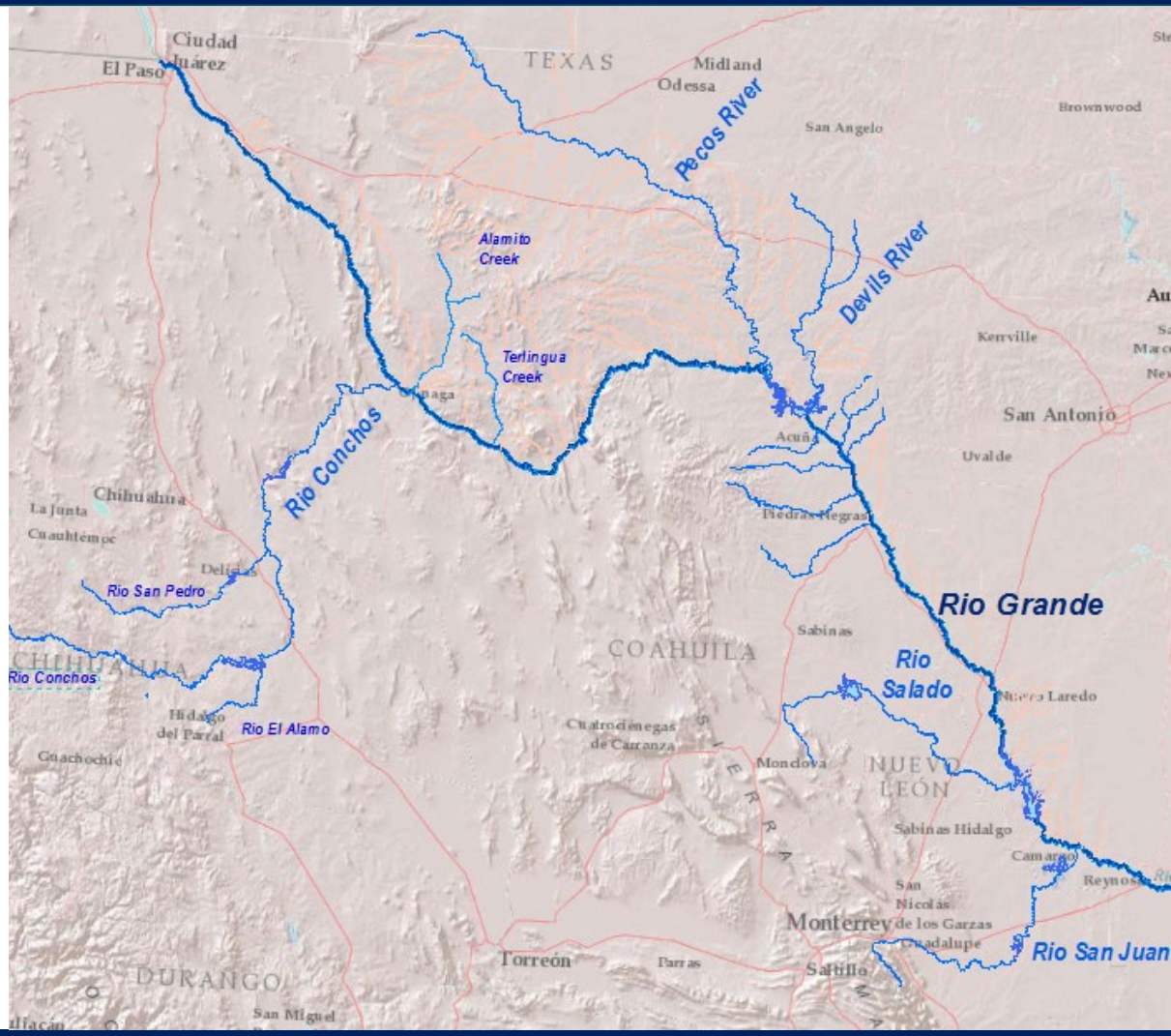
Rio Grande Basin Trends

- Commission Binational Stream Gage Program (1930s)
- Water Accounting Program (1950s)
  - Total Volume of Inflow for U.S. & Mexico
  - Archival of Inflow Ownerships Began in 1981
  - River Evaporative Losses
- Where is our water coming from?



Amistad Dam and Reservoir

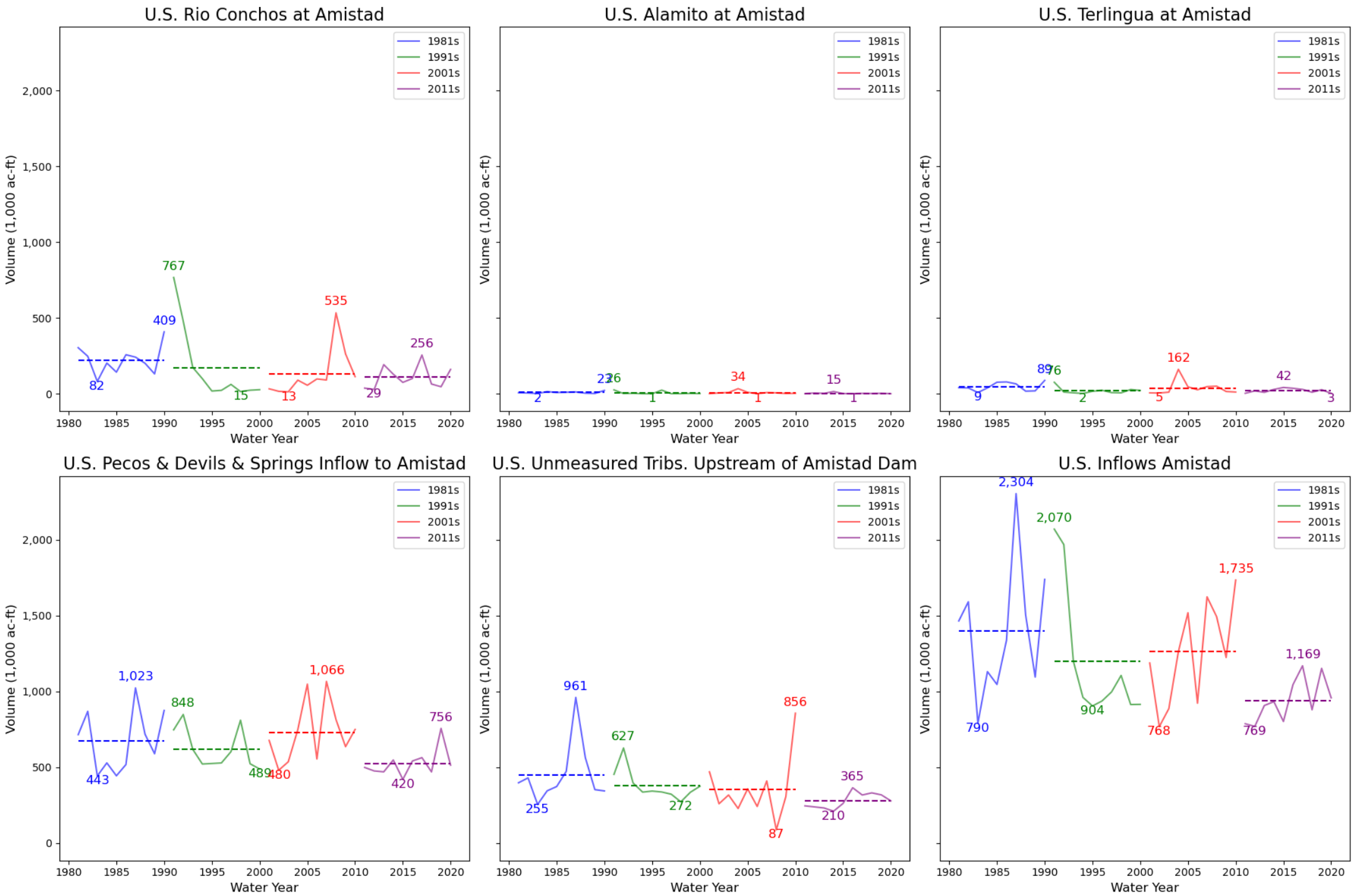
- U.S. Inflows into Amistad Reservoir
  - Rio Conchos (One-third or Minute 234)
  - Terlingua & Alamito Creeks
  - Pecos and Devils Rivers
  - Goodenough Springs
  - 50% of any other flows not otherwise allotted. (Runoff)



Summary of Approach

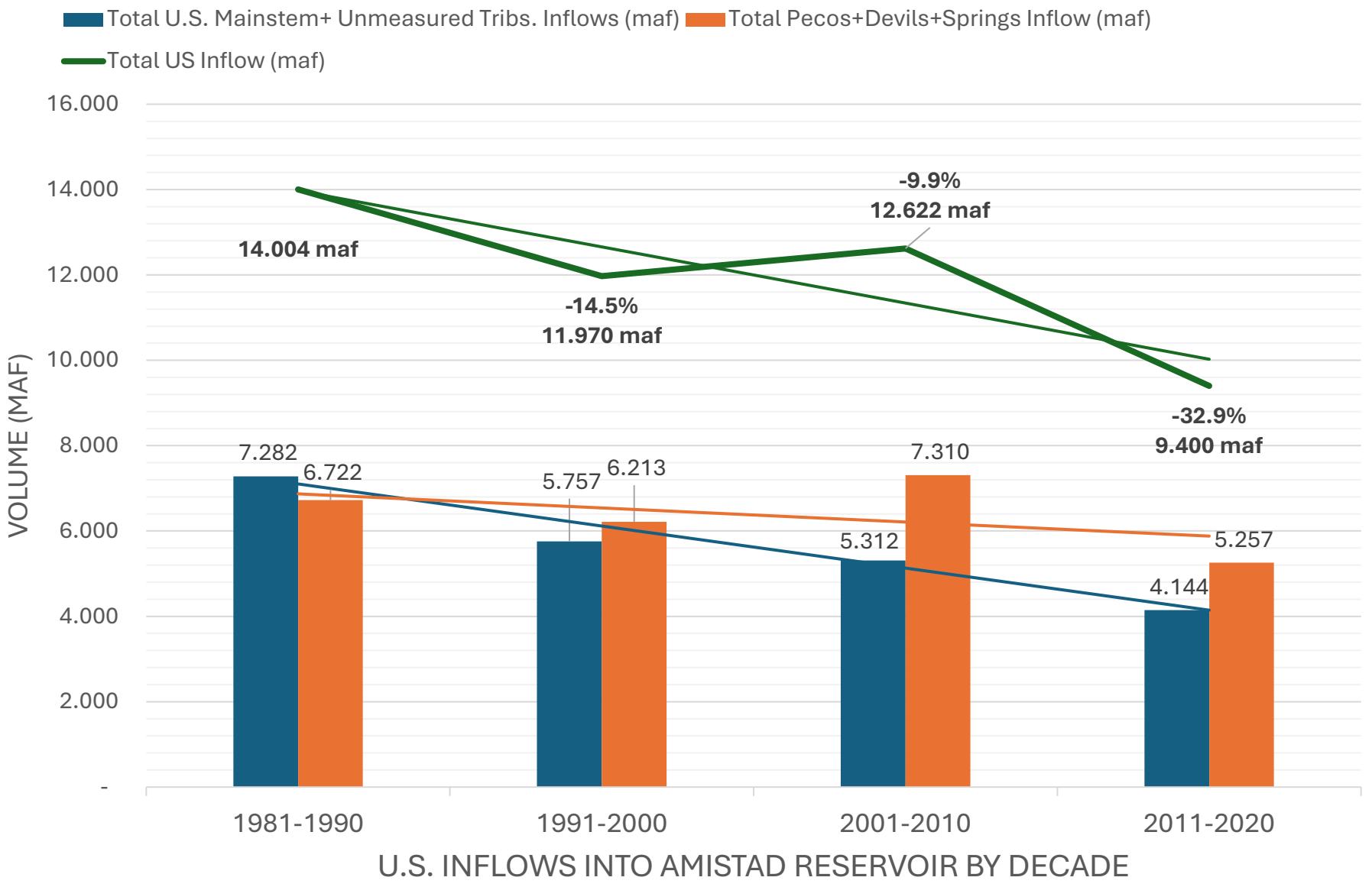
- What we know.
  - Total inflows assigned to each country
  - Ultimately this is what gets allocated to users

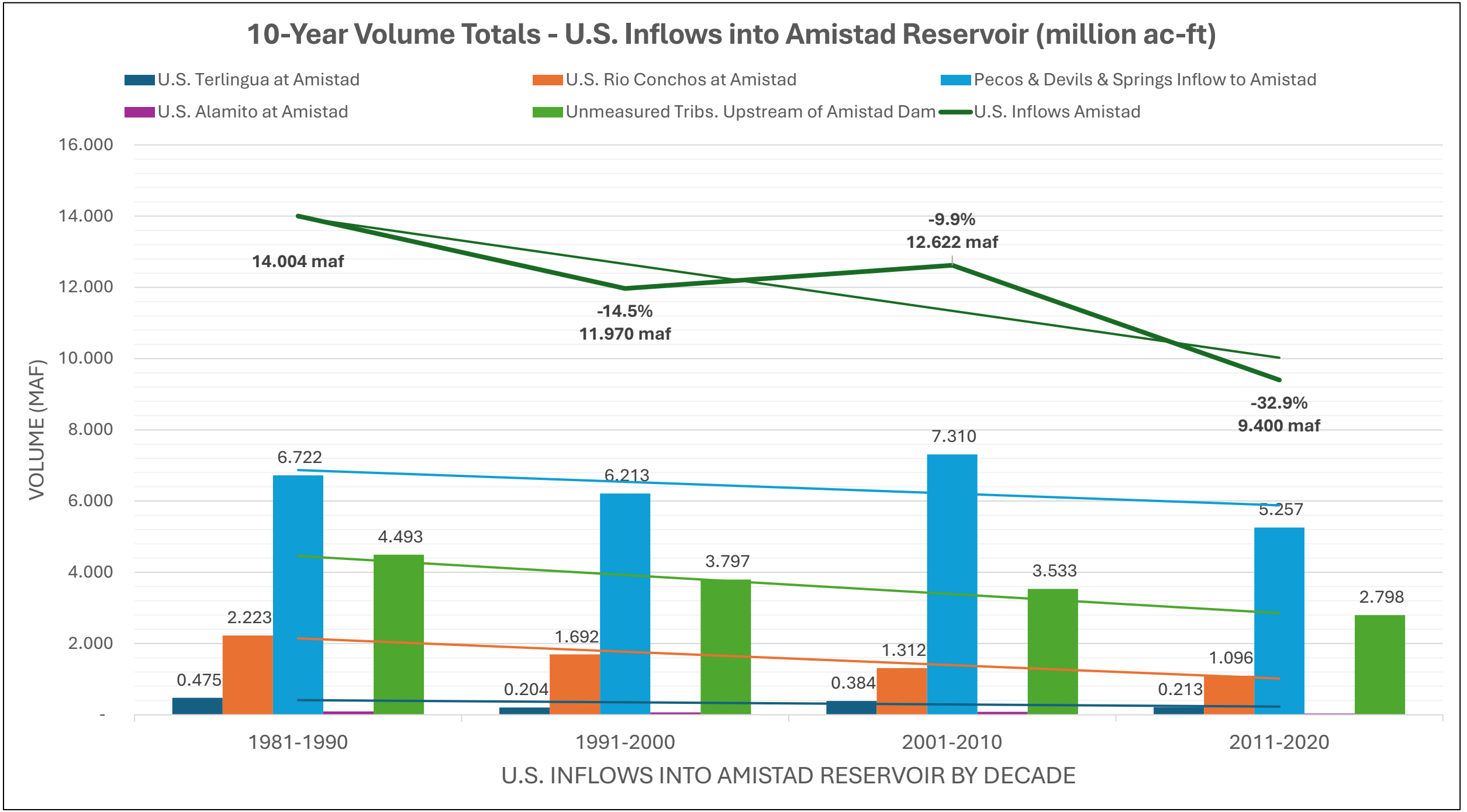
- What we are estimating.
  - How much came from Conchos or Terlingua, Pecos or Unmeasured Run-off
  - Tracking it down the river


U.S. Rio Conchos at Amistad
U.S. Alamito at Amistad
U.S. Terlingua at Amistad
U.S. Pecos & Devils & Springs Inflow to Amistad
U.S. Unmeasured Tribs. Upstream of Amistad Dam
U.S. Inflows Amistad
1981s
1991s
2001s
2011s
Volume (1,000 ac-ft)
Water Year
0
500
1,000
1,500
2,000
1980
1985
1990
1995
2000
2005
2010
2015
2020
82
409
767
15
13
535
29
256
2
23
26
1
34
1
15
1
9
89
76
2
5
162
42
3
443
1,023
848
489
480
1,066
420
756
255
961
627
272
856
87
210
365
790
2,304
2,070
904
768
1,735
769
1,169

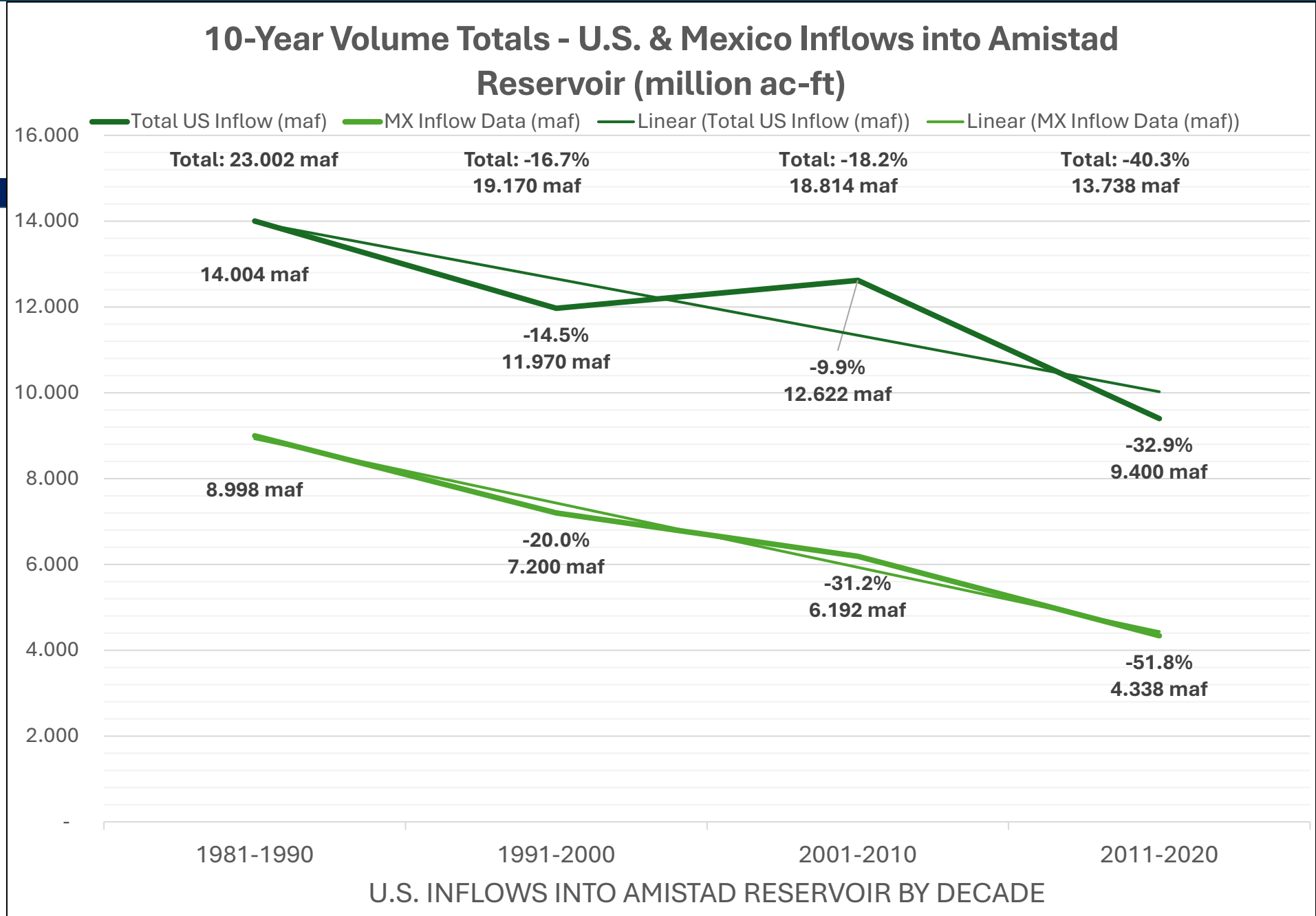
Amistad Dam

- Last 10 – Compared to 2000s
  - 3.2 maf less in Total U.S. Inflow
  - 2.1 maf less from U.S. Tribs. flowing into Amistad
  - 1.1 maf less from the Mainstem U.S. Inflows
- Last 10 - Compared to 1980s
  - 4.6 maf less in total U.S. Inflow
  - 1.5 maf less from U.S. Tribs. flowing into Amistad
  - 3.1 maf less from the Mainstem U.S. Inflows




10-Year Volume Totals - U.S. Inflows into Amistad Reservoir (million ac-ft)
U.S. Terlingua at Amistad
U.S. Rio Conchos at Amistad
Pecos & Devils & Springs Inflow to Amistad
U.S. Alamito at Amistad
Unmeasured Tribs. Upstream of Amistad Dam
U.S. Inflows Amistad
VOLUME (MAF)
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
-
14.004 maf
-14.5%
11.970 maf
-9.9%
12.622 maf
-32.9%
9.400 maf
6.722
6.213
7.310
5.257
4.493
3.797
3.533
2.798
2.223
1.692
1.312
1.096
0.475
0.204
0.384
0.213
1981-1990
1991-2000
2001-2010
2011-2020
U.S. INFLOWS INTO AMISTAD RESERVOIR BY DECADE

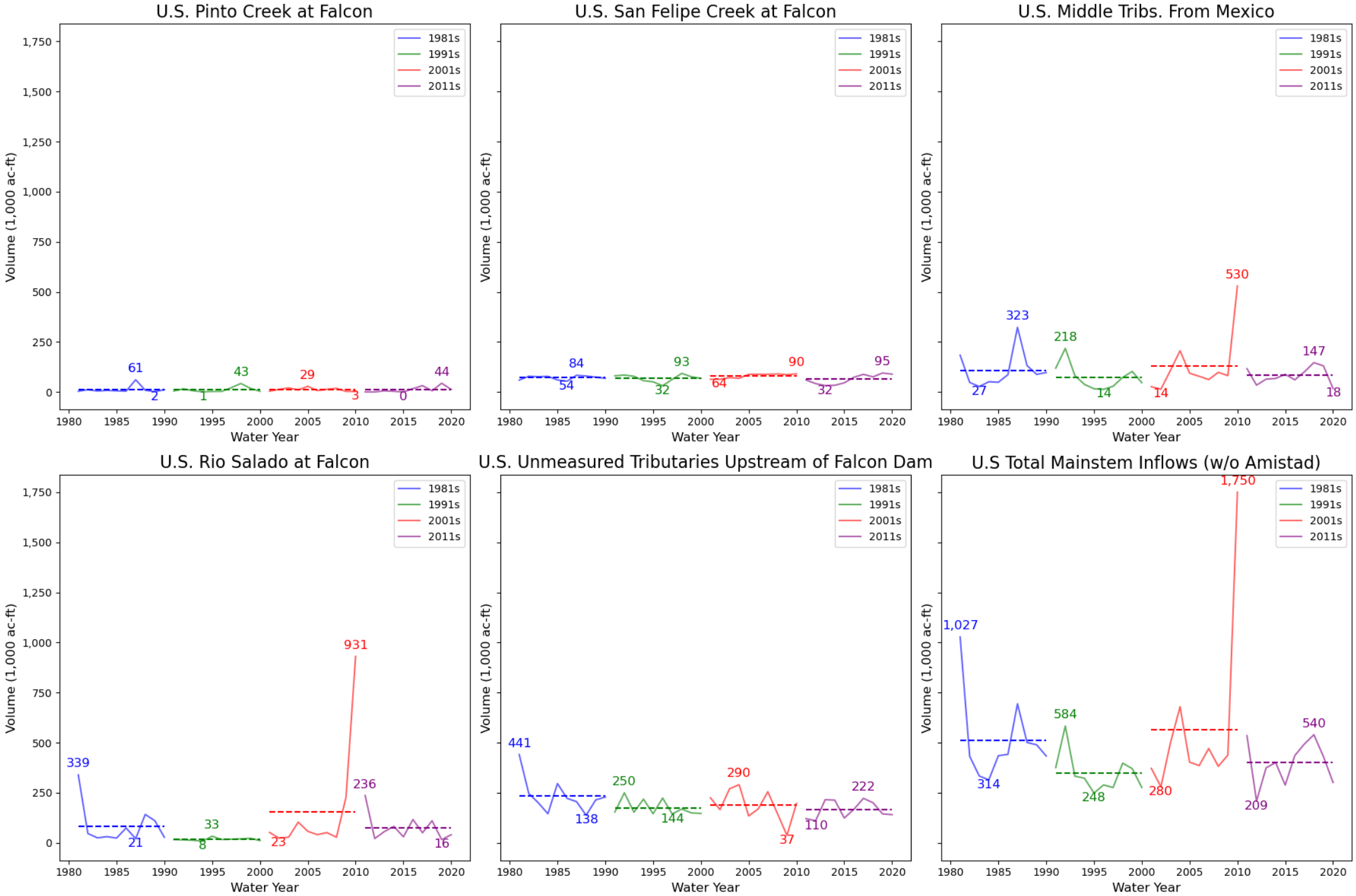
- Data Source is Binational Rio Grande Accounting
- Mexico Inflows
  - 52 % Decline since 1980s
- MX Includes
  - Rio Conchos (allotted)
  - 50% Unmeasured Tribs. & Springs
- U.S. Includes
  - Alamito, Terlingua, Devils, Pecos, U.S. Springs, Rio Conchos (allotted)
  - 50% Unmeasured Tribs. & Springs



Falcon Dam and Reservoir

- U.S. Inflows into Falcon Reservoir
  - Arroyo de las Vacas
  - Rios San Diego, San Rodrigo, Escondido
  - Rio Salado
  - Pinto Creek
  - San Felipe Creek
  - 50% of any other flows not otherwise allotted. (Runoff)

- Amistad Release Removed

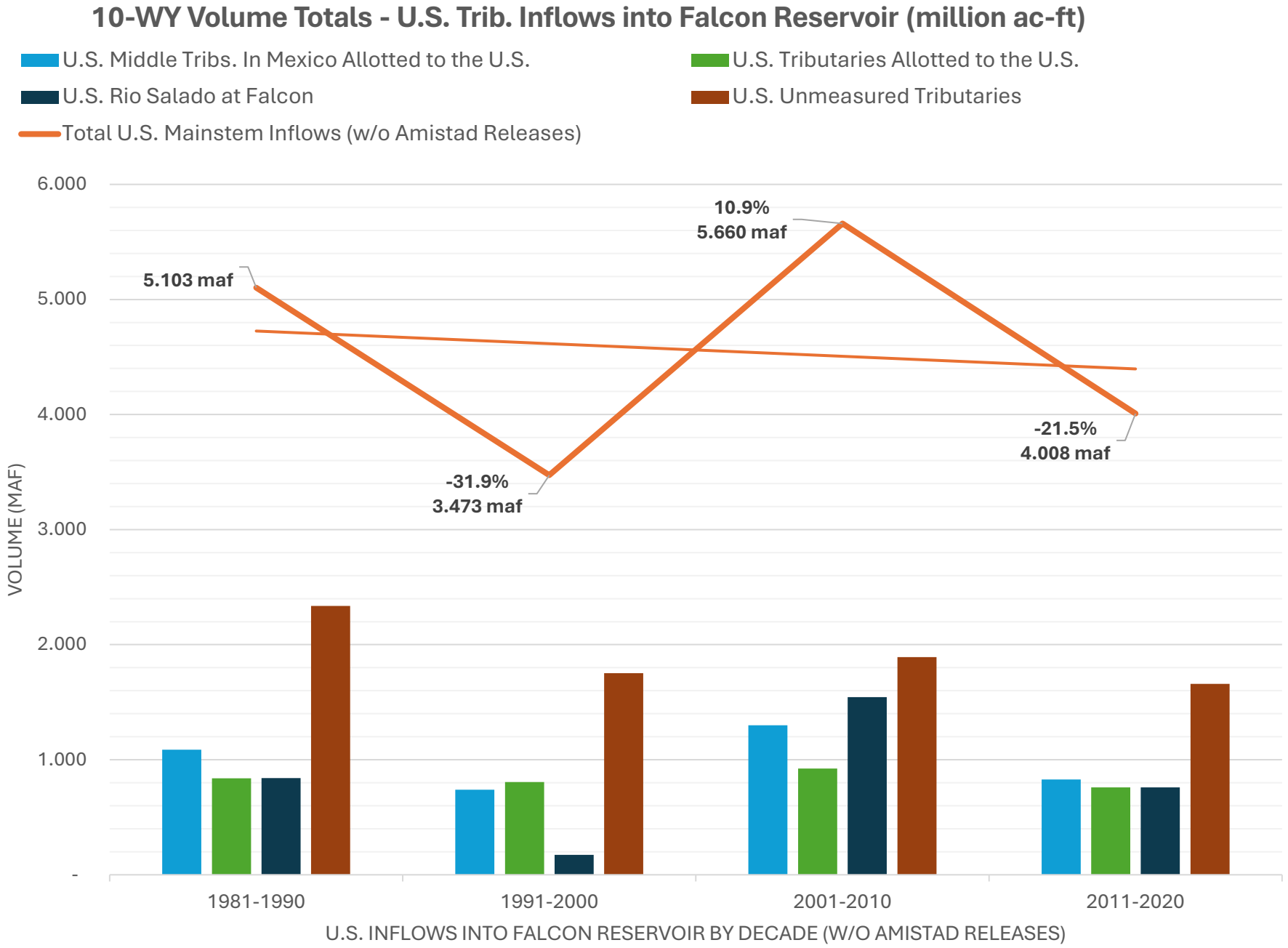

U.S. Pinto Creek at Falcon
U.S. San Felipe Creek at Falcon
U.S. Middle Tribs. From Mexico
U.S. Rio Salado at Falcon
U.S. Unmeasured Tributaries Upstream of Falcon Dam
U.S Total Mainstem Inflows (w/o Amistad)
1981s
1991s
2001s
2011s
Volume (1,000 ac-ft)
Water Year
61
2
43
1
29
3
44
0
84
54
93
32
90
64
95
32
323
27
218
14
530
14
147
18
339
21
33
8
931
23
236
16
441
138
250
144
290
37
222
110
1,027
314
584
248
1,750
280
540
209

Last 10 – Compared to 2000s

- 1.6 maf less in Total U.S. Inflow
- 0.16 maf less from U.S. Tribs. flowing into Falcon
- 1.26 maf less from Mx Tribs. Flowing into Falcon
- 0.23 maf less from Unmeasured Tributaries

Last 10 - Compared to 1980s

- 1.1 maf less in total U.S. Inflow
- 0.08 maf less from U.S. Tribs. flowing into Falcon
- 0.34 maf less from Mx Tribs. Flowing into Falcon
- 0.68 maf less from Unmeasured Tributaries



Initial Observations

- Decline in US Inflows into Amistad compared to 1980s
  - 33% Decrease or 460,000 acre-feet annually
  - U.S. Tribs. Declined 178,000 ac-ft (-24%)
  - Mx Tribs. Declined 113,000 ac-ft (-51%)
  - Unmeasured Tribs. Declined 170,000 ac-ft (-38%)

- Decline in US Inflows into Falcon compared to 1980s
  - 21.5% or 110,000 acre-feet annually
  - U.S. Tribs. Declined 8,000 ac-ft (-9%)
  - Mx Tribs. Declined 34,000 ac-ft (-18%)
  - Unmeasured Tribs. Declined 68,000 ac-ft (-29%)

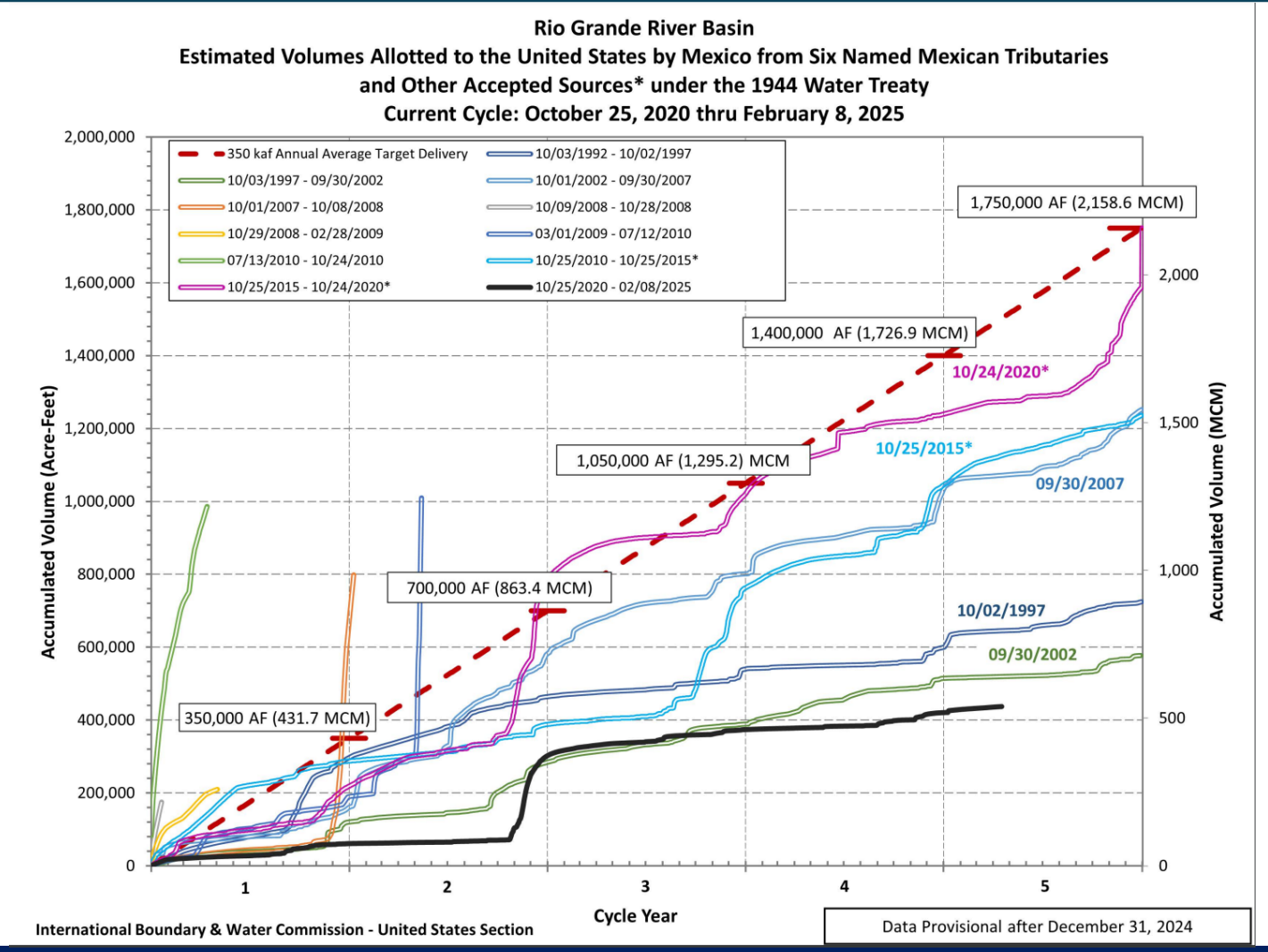
1944 Water Treaty – 5YR Cycle Deliveries

5yr Cycle Deliveries (as of 08 Feb. 2025)

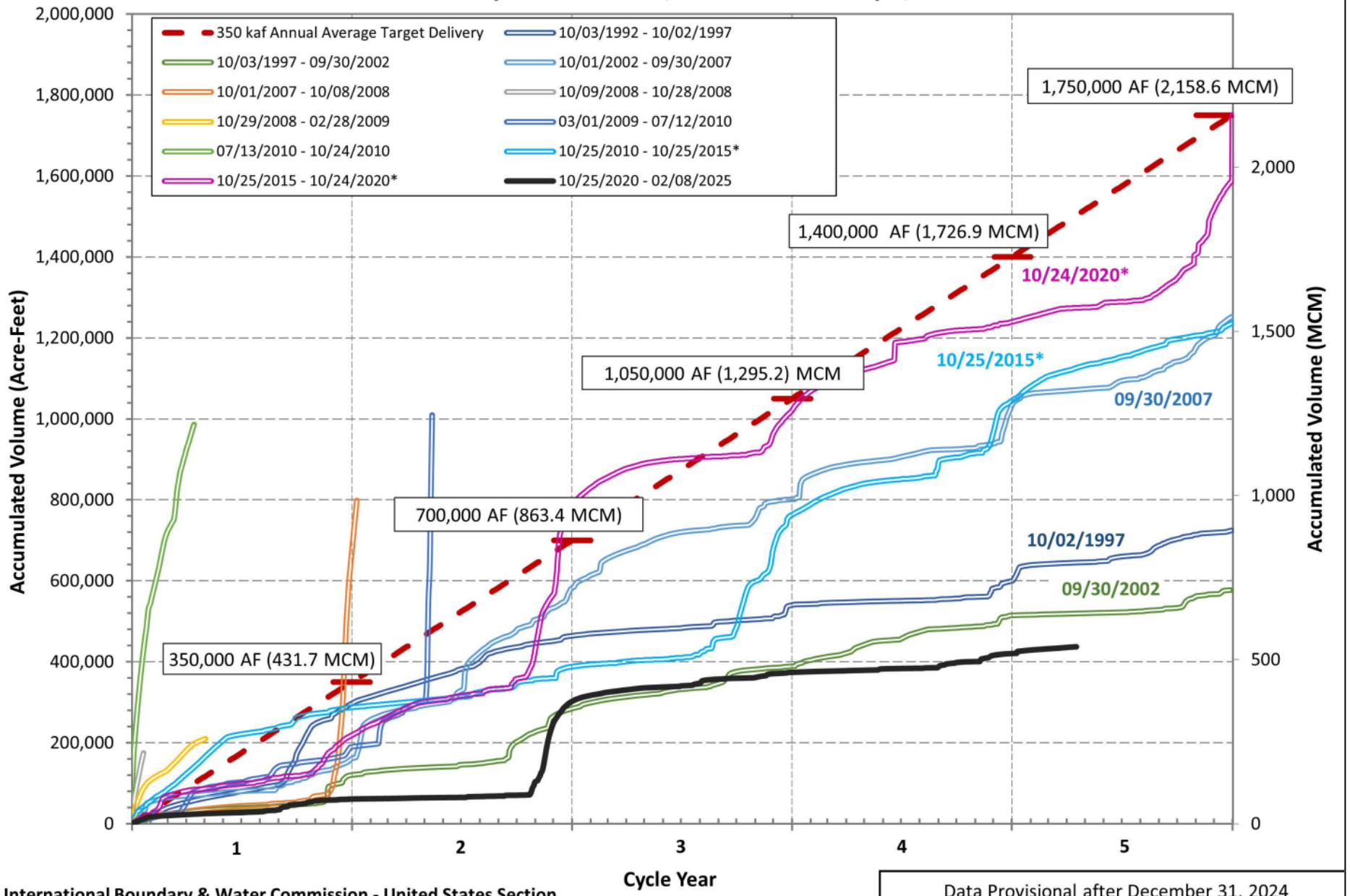
- o Cycle Year 1 – 61,161 AF (75.4 MCM)
- o Cycle Year 2 – 240,266 AF (296.4 MCM)
- o Cycle Year 3 – 72,522 AF (89.5 MCM)
- o Cycle Year 4 – 46,650 AF (57.5 MCM)
- o Cycle Year 4 – 16,637 AF (20.5 MCM)

- o Cycle to date – 437,235 AF (539.3 MCM)

- o 1,031,468 AF (1,272 MCM) below seasonal curve
- o 29.76% of expected minimum seasonal deliveries

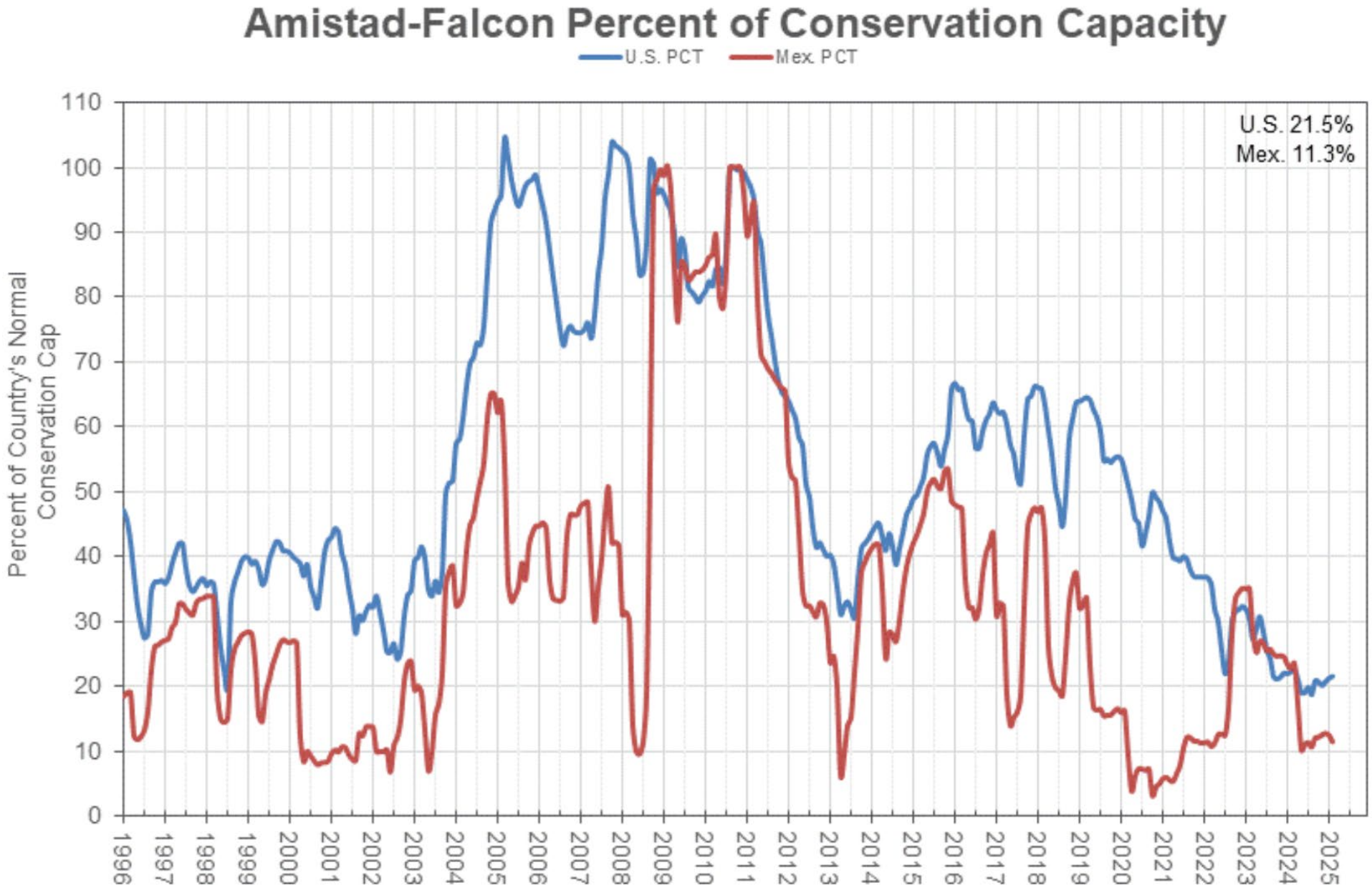


Rio Grande River Basin
Estimated Volumes Allotted to the United States by Mexico from Six Named Mexican Tributaries and Other Accepted Sources* under the 1944 Water Treaty
Current Cycle: October 25, 2020 thru February 8, 2025



International Boundary & Water Commission - United States Section

Data Provisional after December 31, 2024



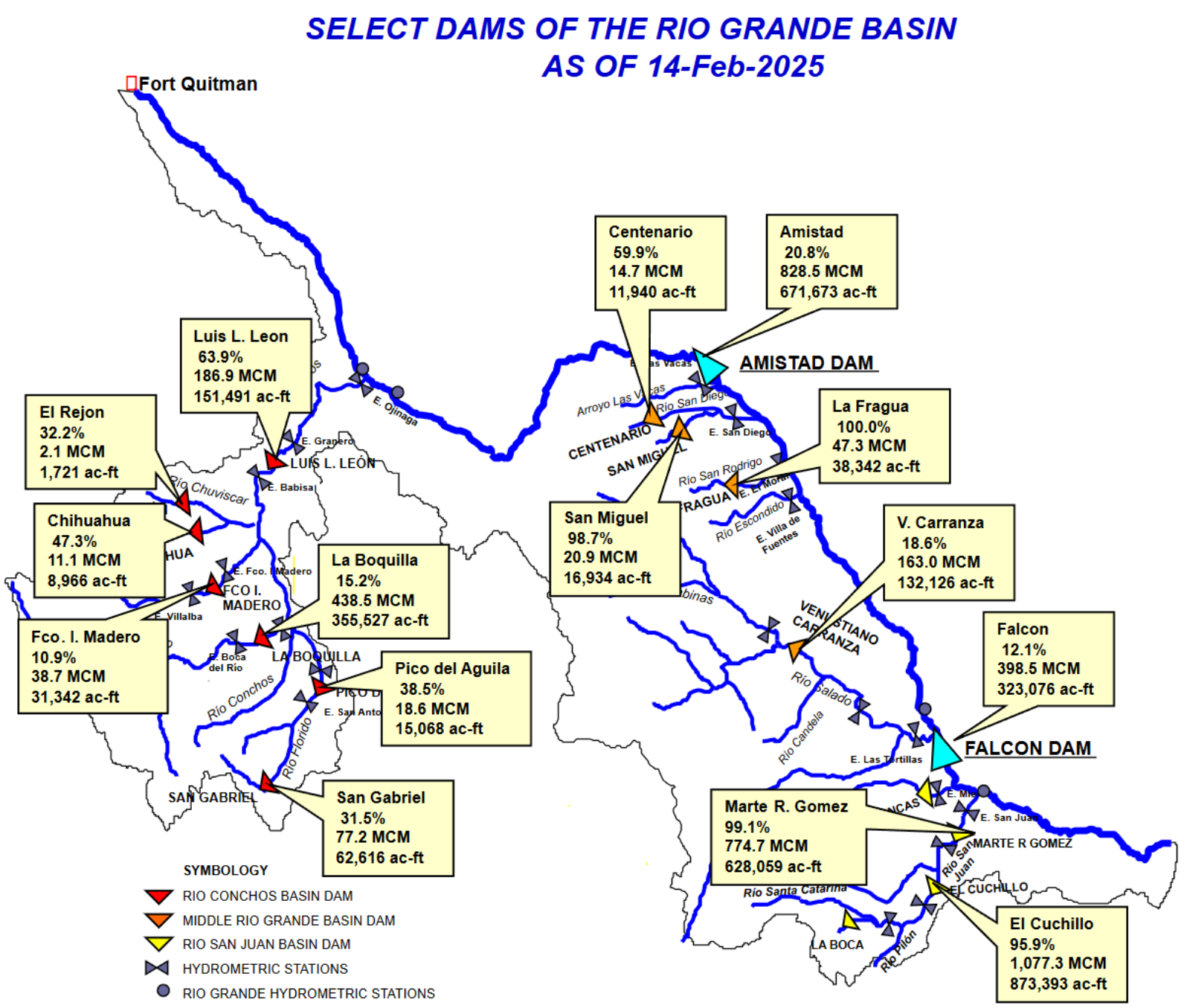
Derived from preliminary weekly accounting for 08 February 2025.
https://ibwcsftpstg.blob.core.windows.net/wad/WeeklyReports/amfalpct.gif

	U.S. Storage		
	%cap	TCM	Acre-Ft
Amistad	26.3%	589,000	478,000
Falcon	15.8%	305,000	247,000
Total	21.5%	894,000	725,000
	Mx. Storage		
	%cap	TCM	Acre-Ft
Amistad	13.8%	241,000	195,000
Falcon	8.1%	110,000	89,000
Total	11.3%	351,000	284,000

Derived from preliminary weekly accounting for 08 February 2025

Region	Storage (MCM)	% Capacity
Rio Conchos	773.064	20.00%
Middle Rio Grande	245.885	25.42%
Lower Rio Grande	1,875.415	94.31%

Region	Storage (KAF)	% Capacity
Rio Conchos	626.730	20.00%
Middle Rio Grande	199.341	25.42%
Lower Rio Grande	1,520.415	94.31%



Signing of Minute 331 – Nov. 7, 2024

From left to right:
Mexican IBWC Secretary Manuel Morales, Mexican IBWC Commissioner Adriana Reséndez, U.S. IBWC Commissioner Maria-Elena Giner, U.S. IBWC Secretary Sally Spener

First major minute regarding Water Deliveries under the 1944 Treaty since 1969 (Minute 234)

Minute 331 Work Groups

- Continues Support for the Rio Grande Policy and Hydrology Work Groups
- Establishes a Projects Work Group to Develop Conservation and New Water Sources Projects
- Establishes an Environmental Work Group to Address Environmental Aspects in the Rio Grande
- Continued support of the Lower Rio Grande Water Quality Initiative to address Water Quality Concerns

Minute 331 Tools

Agencies in both countries at multiple levels agreed that we needed new tools to improve the reliability and predictability of Rio Grande Water Deliveries.

- Mexico will release excess storage in reservoirs on the 6 named tributaries to the Rio Grande Main Stem.
- Mexico will consider allocating volumes towards fulfilling delivery obligations to reduce/avoid deficiencies.
- Use of Mexico's portion of the 6 named tributaries at any time, subject to agreement by both countries.

Minute 331 Tools

- Direct transfer of Mexico's waters in Amistad and Falcon to the United States, subject to agreement by both countries.
- Use of Rio San Juan and Rio Alamo in accordance with Article 9(e) of the 1944 Water Treaty, and when the United States can put it to beneficial use, subject to agreement by both countries.
- The ability to use these tools expires 5 years after the signing of minute, unless both countries agree to extend the timeline via a subsequent Minute.

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915-832-4727

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INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES SECTION

Amistad Dam Area Operations & Maintenance

Evelio Siller
Area Operations Manager
February 19-20, 2025

Amistad Dam Field Office

OVERVIEW

1. *2024 Accomplishments*
2. *HER Acquisitions*
3. *Inspections: Dam, Powerplant, Underwater*
4. *USACE Inspection Recommendations*
5. *2025 Capital Projects*
6. *2025 Deferred Maintenance Projects*
7. *2025 In-House Work*
8. *2025 Powerplant Captial / Maintenance Projects*
9. *2025 Flood Preparedness*

Amistad Dam Infrastructure

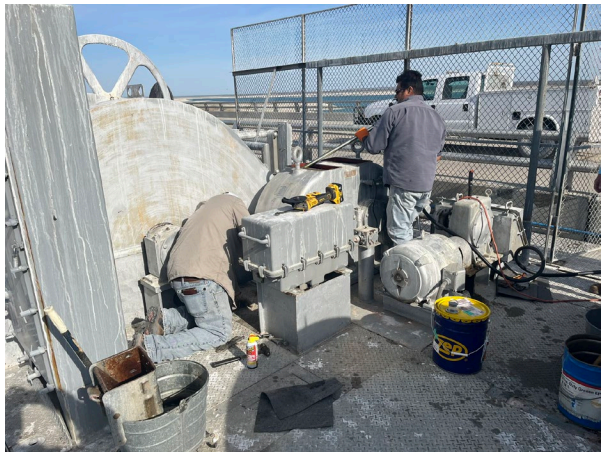
1. *Power Plant (2 Generators)*
2. *Dam Concrete Section & Control Building*
3. *(4) Miles Dam Embankment*
4. *(8) Radial (Tainter) Gates*
5. *(8) Stoplogs at Radial Gates*
6. *(5) Penstocks*
   - *(4) Headgates (Roller Slide)*
   - *(2) Irrigation Gates: 1 Hydraulic & 1 Roller Slide*
   - *(1) Bulkhead Gate*
7. *(5) Admin. & Warehouse Buildings*
8. *(6) Gov.'t Rental Housing*
9. *Water Storage Tank*
10. *21 Hydrological Gauging Stations & 15 Wells*
11. *(28) International Reservoir Buoy's*
12. *(4) Demarcation Boundary Markers on Bridges*

2024 Accomplishments

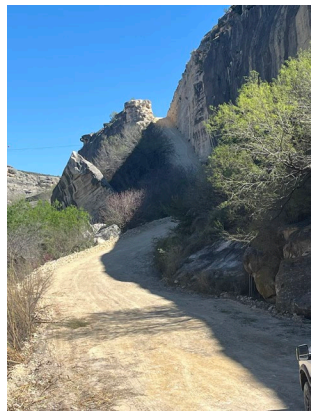
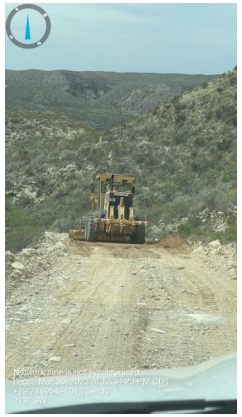
- **Implemented repairs and replacements based on the U.S. Army Corps of Engineers' (USACE) five-year inspection recommendations,**
- **Completed major inspections and routine maintenance on the Power Plant at Generator #1, turbine pit, wicket gates, penstock, headgate and hoist, exciters 1 and 2, and control panels.**
- **Performed maintenance on water conveyances projects, including 50 miles of hydrologic gauging station roadwork and 25 acres of vegetation removal under cableways.**
- **Contracted detailed inspections of all structural, mechanical, electrical, and geotechnical parts of the dam and power plant, and used the Bureau of Reclamation dive team to check the upstream and downstream portions of the dam and plant.**
- **Ongoing rehabilitation of the Power Plant, to include sandblasting, epoxy repairs, and painting of the wicket gates, spiral case, draft tube, and the runner cone on Generator #1. Replacement of the wicket gate seals on Generator #1 will also be completed, followed by Generator #2.**
- **Completed the replacement and restoration of international boundary demarcation pavement markers and/or plaques at ports of entry at International Dam, Del Rio International Bridge, Eagle Pass International Bridge 1, and Eagle Pass International Bridge 2, in accordance with international agreements.**
- **Performed maintenance of buoys, including cleaning and replacement of lighting devices and associated batteries. The team also recovered four detached buoys.**
- **Controlled vegetation on 75 acres around the field office.**

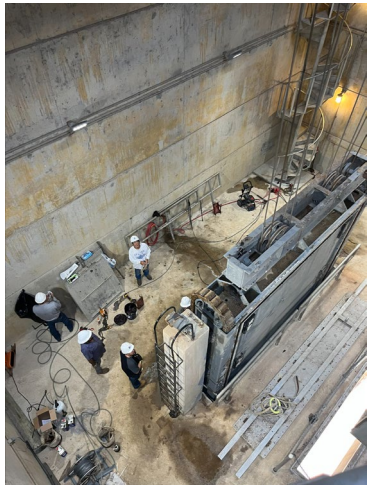
Heavy Equipment Replacement for Amistad Field Office

2024 Accomplishments



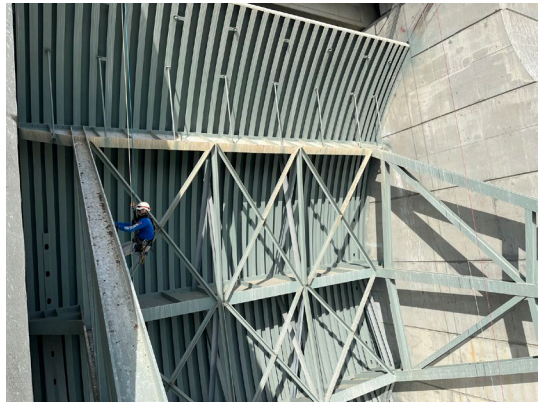






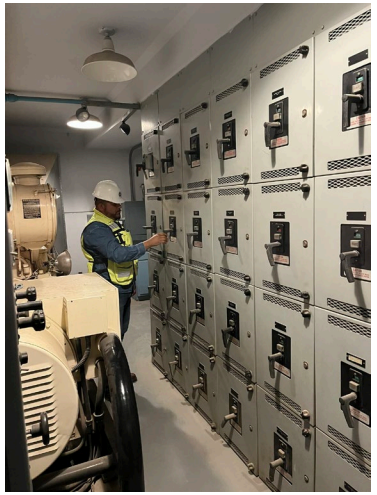

AMISTAD

Amistad Dam 5 Year Dam Inspection

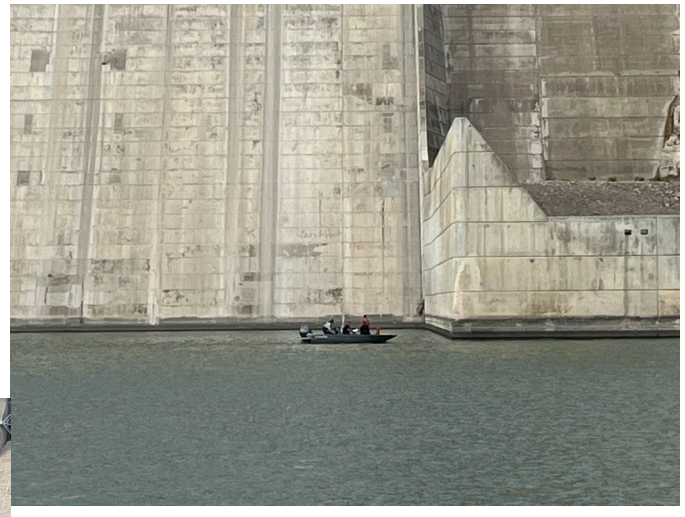


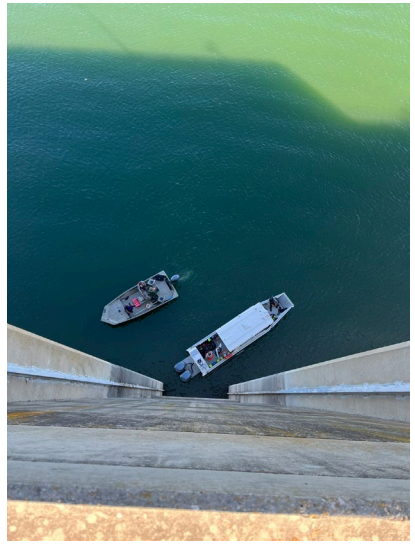




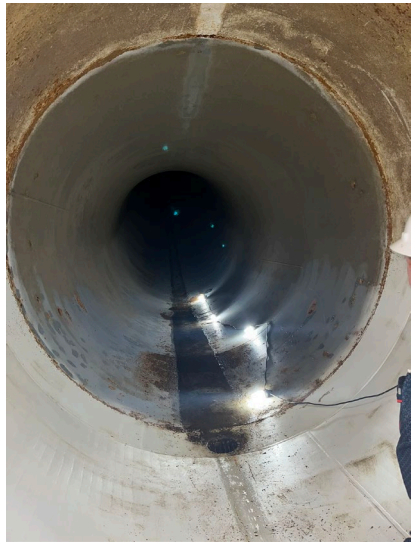



Amistad Dam and Powerplant Underwater Inspection





Powerplant Inspection



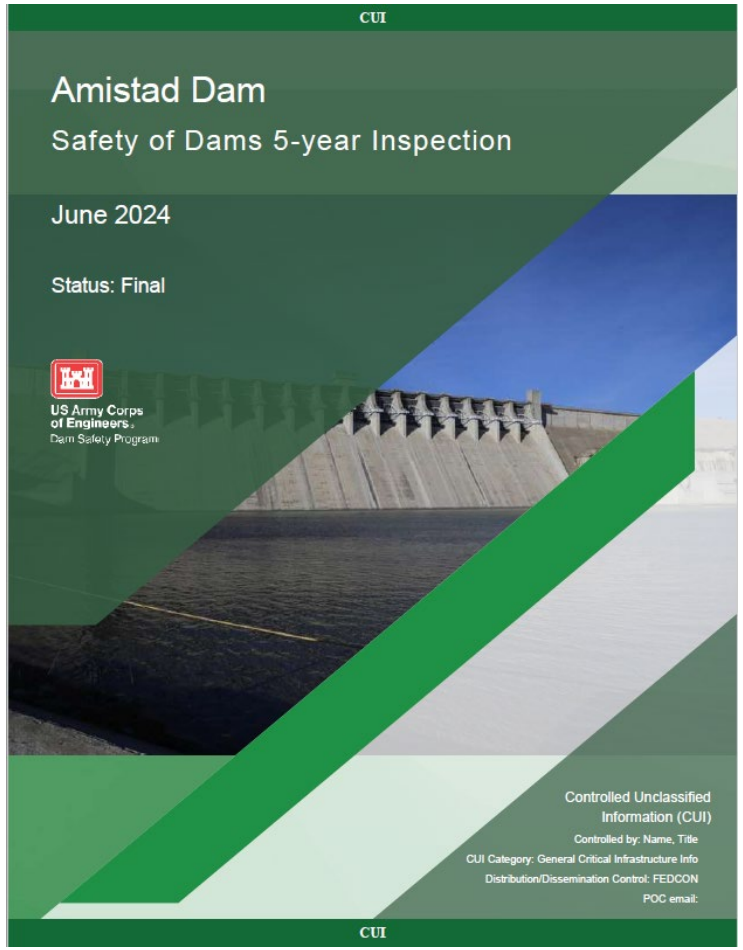
USACE 5 Year Recommendations

Critical Recommendation:

1. **Radial Gate Rope cable tensioning**
2. **Radial Gate Trunnion Pin Lubrication**
3. **Radial Gate 1 grease line reconnection. (Completed)**

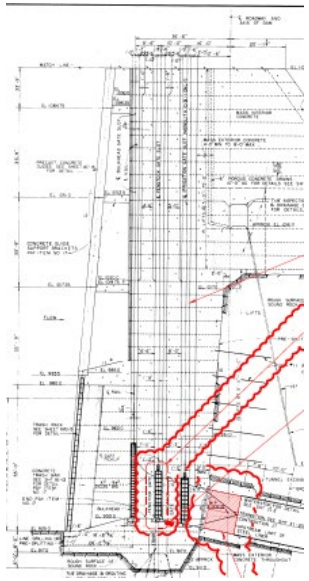
Urgent Action:

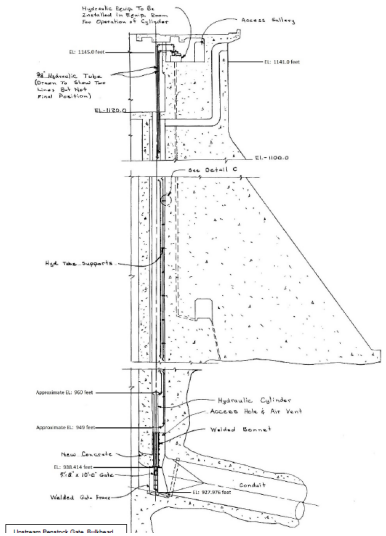
1. **Evaluate, design, establish a procedure and execute corrective actions for sinkholes found during inspection. (Completed)**



2025 Dam Capital Projects (Contractor)

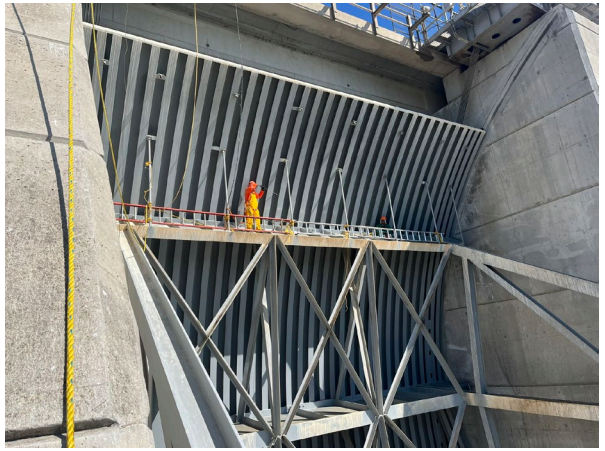
1. **Penstock 4 Concrete Plug**
2. **Penstock 5 Irrigation Gate Repair**
3. **Radial Gates Electrical Panel Upgrade**





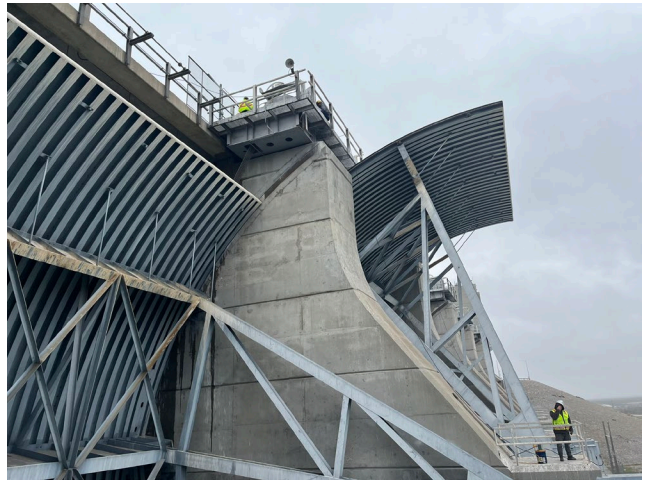
2025 Dam Deferred Maintenance Projects (Contractor)

1. **Radial Gates Sandblast and Painting**
2. **Radial Gate Seal Replacements**
3. **Radial Gate Anode Replacements**
4. **Radial Gate Cable Tensioning**



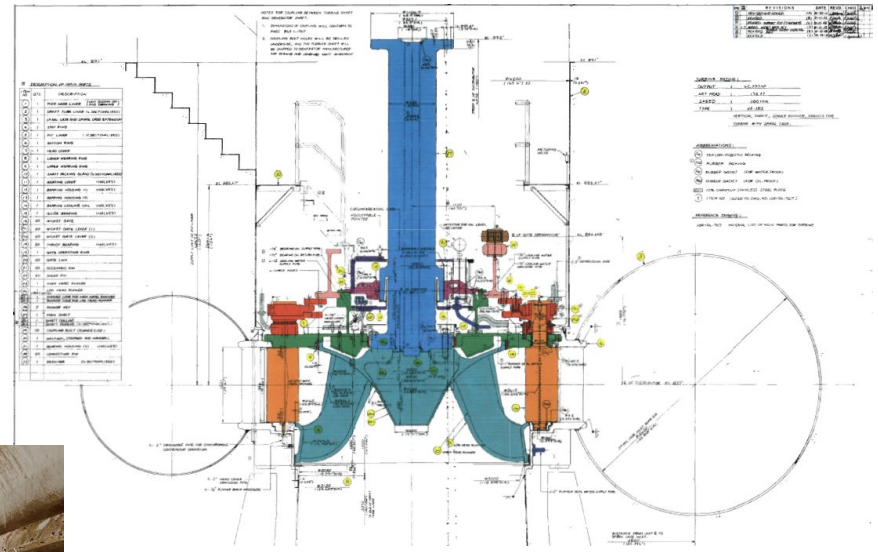
2025 Dam In-house Projects

1. Radial Gates Mechanical Hoistway Components Rehabilitation
2. Radial Gates Trunnion Pin Inspection and Lubrication
3. Radial Gates U-bolt Inspection and Lubrication
4. Continue with routine maintenance
5. Continue with roadwork and vegetation removal at hydro gauging stations.
6. Continue with buoy maintenance
7. Continue with boundary demarcation markers maintenance.



2025 Powerplant Capital Projects

1. **Sandblast and repaint Runner Cone and Wicket Gate Seal Replacement for Generator #2.**



2025 Flood Preparedness

1. **2025 Binational Flood Work shop (Tentative May 13th to May 16th)**
   - **Amistad Dam May 13th**
   - **Falcon Dam May 14th**
   - **Anzalduas and Retamal May 15th**
2. **2025 Emergency Action Plan Meeting with local stakeholders**
   - **May 12th in Del Rio, TX. (Tentative)**
3. **2025 Flood Warning Notices**
   - **Distribute and post in April**

INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES SECTION

SAFETY OF DAMS PROGRAM

Mario Gomez - Acting Chief of Operations and Maintenance

Evelio Siller – Area Ops. Manager Amistad Dam Field Office

February 19-20, 2025

Presentation Prepared by Lorena Soriano – Safety of Dams Engineer

SAFETY OF DAMS PROGRAM
INTRODUCTION

- **WELCOME**
  - Mario Gomez, Acting O&M Division Chief
- **OVERVIEW**
  - Safety of Dams Program
  - Benefit of Dams
  - DSAC Ratings & IBWC Dams
  - Types of Inspections & 5-Year Inspection Summary
  - Amistad Dam Field Office Activity – Evelio Siller

SAFETY OF DAMS PROGRAM

- **PUBLIC LAW 92-367**
  - Act of 1972 - Authorized the Secretary of the Army to undertake a national program of inspection of dams.
  - In response to the Buffalo Creek Dam failure in West Virginia in 1972 killing 125 people.
  - IBWC Safety of Dams Program Conforms with this Act Provisions

SAFETY OF DAMS PROGRAM

- **BINATIONAL PROGRAM**
  - Federal Emergency Management Agency (FEMA) Federal Guidelines for Safety of Dams (2004)
  - Joint Technical Advisors Report (JTAR)
    - USIBWC Contracts the USACE for the Periodic Inspections (every 5 years)
    - MX Section provides technical experts from CONAGUA and CFE

BENEFITS OF DAMS

- **RENEWABLE, CLEAN ENERGY – HYDROPOWER**
  - 7% of U.S. electricity generation
  - Nearly 37% of U.S. renewable electricity generation
- **FLOOD CONTROL**
  - $1.7 B in annual benefits in reduced flooding & erosion damage
- **WATER STORAGE**
  - Reservoirs supply water for multitude of uses
    - Fire Control
    - Irrigation (10% of American cropland)
    - Domestic & Industrial Water Supply
    - Reduce the impact of droughts

Source: FEMA.gov

BENEFITS OF DAMS

- **NAVIGATION**
  - USACE navigation projects serve 41 states
  - USACE maintains 12,000 miles of channels
  - 15% of U.S. freight carried by inland waterways
  - Operates 275 docks and 926 harbors

- **RECREATION**
  - Prime recreation facilities throughout the U.S.
  - 10% of the U.S. population visits these facilities

Source: FEMA.gov

USACE DAM SAFETY ACTION CLASSIFICATION (DSAC)

- **DSAC I**
  - **Very High Urgency** of Action
- **DSAC II**
  - **High Urgency** of Action
- **DSAC III**
  - **Moderate Urgency** of Action
- **DSAC IV**
  - **Low Urgency** of Action
- **DSAC V**
  - **Normal Urgency** of Action

ER 1110-2-1156
31 Mar 14

Table 3.1 - USACE Dam Safety Action Classification Table - 27 Jan 2014*

URGENCY OF ACTION (DSAC)	ACTIONS FOR DAMS IN THIS CLASS***	CHARACTERISTICS OF THIS CLASS
VERY HIGH (1)	Take immediate action to avoid failure. Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Implement interim risk reduction measures, including operational restrictions. Ensure the emergency action plan is current and functionally tested for initiating event. Conduct heightened monitoring and evaluation. Expedite investigations to support remediation using all resources and funding necessary. Initiate intensive management and situation reports.	CRITICALLY NEAR FAILURE: Progression toward failure is confirmed to be taking place under normal operations. Dam is almost certain to fail under normal operations to within a few years without intervention. OR EXTREMELY HIGH INCREMENTAL RISK**: Combination of life or economic consequences with likelihood of failure is very high. USACE considers this level of life-risk to be unacceptable except in extraordinary circumstances.
HIGH (2)	Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Implement interim risk reduction measures, including operational restrictions as warranted. Ensure the emergency action plan is current and functionally tested for initiating event. Conduct heightened monitoring and evaluation. Expedite confirmation of classification. Give very high priority for investigations to support the need for remediation.	FAILURE INITIATION FORESEEN: For confirmed and unconfirmed dam safety issues, failure could begin during normal operations or be initiated as the consequence of an event. The likelihood of failure from one of these occurrences, prior to remediation, is too high to assure public-safety. OR VERY HIGH INCREMENTAL RISK**: The combination of life or economic consequences with likelihood of failure is high. USACE considers this level of life-risk to be unacceptable except in extraordinary circumstances.
MODERATE (3)	Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Implement interim risk reduction measures, including operational restrictions as warranted. Ensure the emergency action plan is current and functionally tested for initiating event. Conduct heightened monitoring and evaluation. Prioritize investigations to support the need for remediation informed by consequences and other factors.	MODERATE TO HIGH INCREMENTAL RISK**: For confirmed and unconfirmed dam safety issues, the combination of life, economic, or environmental consequences with likelihood of failure is moderate. USACE considers this level of life-risk to be unacceptable except in unusual circumstances.
LOW (4)	Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Conduct elevated monitoring and evaluation. Give normal priority to investigations to validate classification, but do not plan for risk reduction measures at this time.	LOW INCREMENTAL RISK**: For confirmed and unconfirmed dam safety issues, the combination of life, economic, or environmental consequences with likelihood of failure is low to very low and the dam may not meet all essential USACE guidelines. USACE considers this level of life-risk to be in the range of tolerability but the dam does not meet all essential USACE guidelines.
NORMAL (5)	Continue routine dam safety activities and normal operations, maintenance, monitoring, and evaluation.	VERY LOW INCREMENTAL RISK**: The combination of life, economic, or environmental consequences with likelihood of failure is low to very low and the dam meets all essential USACE guidelines. USACE considers this level of life-safety risk to be tolerable.

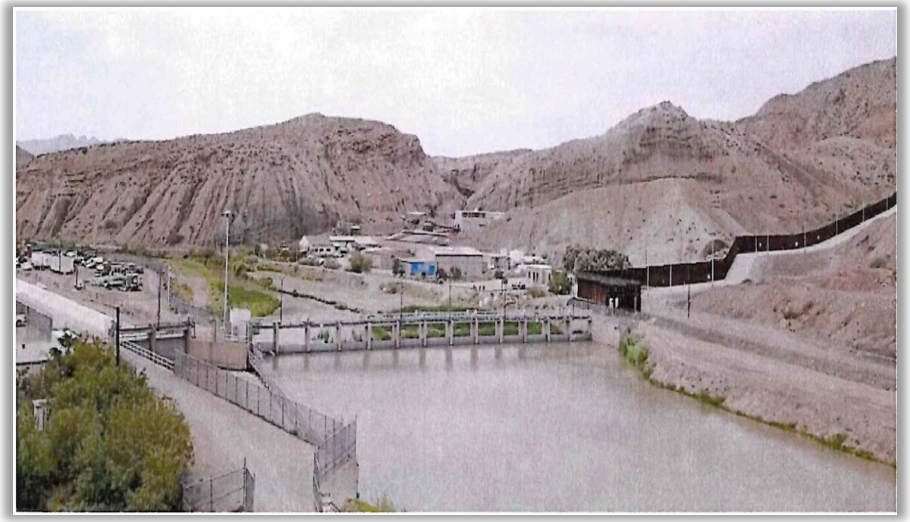
*At any time for specific events a dam, from any action class, can become an emergency requiring activation of the emergency plan.
** INCREMENTAL RISK is used to inform the decision on the DSAC assignment; NON-BREACH RISK is not reflected in this table.
***DSAC 1 and 2 dams with no life loss will be referred to the appropriate business line program and are given lower priority in the dam safety program.

IBWC DAMS – MIDDLE RIO GRANDE DAMS
STORAGE DAMS

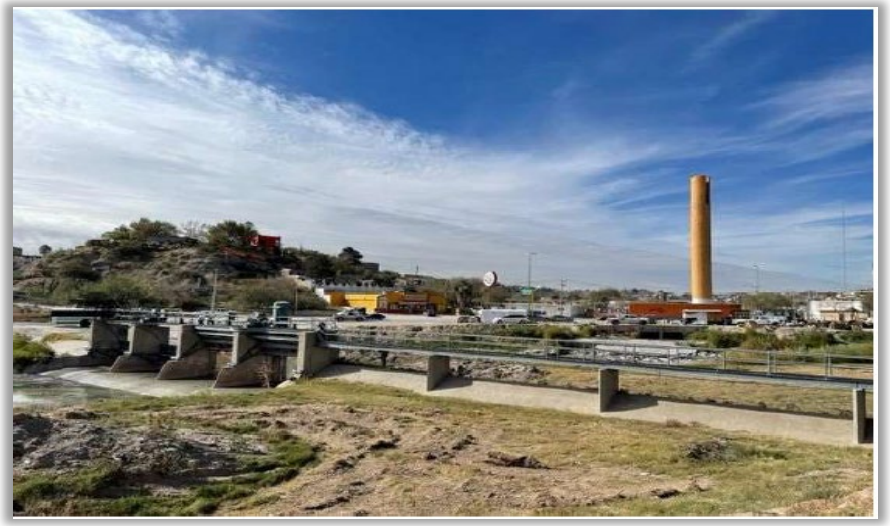
AMISTAD DAM
DEL RIO, TEXAS
DSAC II Very High Urgency

FALCON DAM
FALCON HEIGHTS, TEXAS
DSAC III Moderate Urgency

IBWC DAMS – UPPER RIO GRANDE DAMS
DIVERSION DAMS



AMERICAN DAM
EL PASO, TEXAS
DSAC III - Moderate Urgency



INTERNATIONAL DAM
EL PASO, TEXAS
DSAC III - Moderate Urgency

IBWC DAMS – LOWER RIO GRANDE DAMS
DIVERSION DAMS

ANZALDUAS DAM
HIDALGO COUNTY, TEXAS
DSAC IV Low Urgency

RETAMAL DAM
HIDALGO COUNTY, TEXAS
DSAC III Moderate Urgency

IBWC DAMS – MEXICO'S MORELOS DAM DIVERSION DAM

MORELOS DAM
ALGODONES, BAJA CALIFORNIA
MEXICO
DSAC III Moderate Urgency

TYPES OF INSPECTIONS FY2023 & FY2024

- 5-Year USACE DETAIL DAM INSPECTIONS
  - Hydraulic Steel Structure (HSS)
  - Gate Operability & Capability Inspection (GOCI)
  - Mechanical
  - Electrical
  - Geotechnical
  - Spillway
  - Highway and Pedestrian Bridge
  - Penstock Gates
- 5-Year JOINT DAM INSPECTION (U.S. & Mexico)
  - Technical Experts from the U.S & Mexico
  - Joint Report (List of Recommendations) signed by both Sections

AMISTAD DAM 5-YEAR INSPECTION SUMMARY

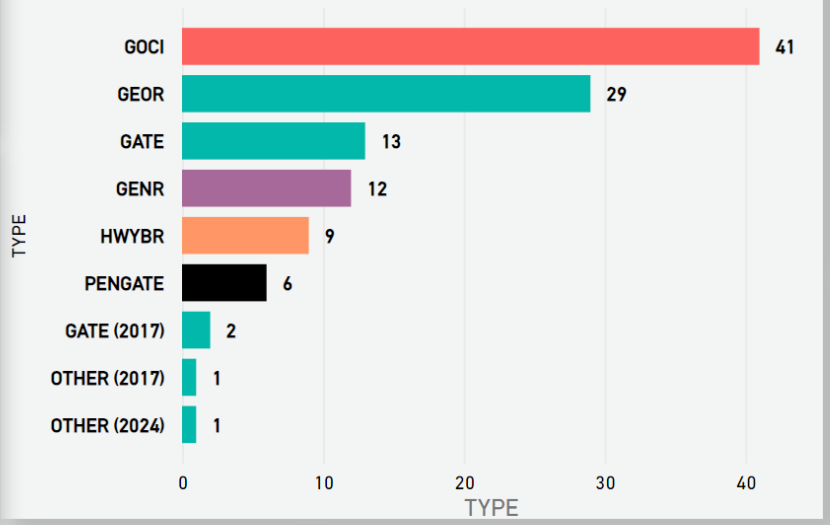
NO. OF RECOMMENDATIONS

114

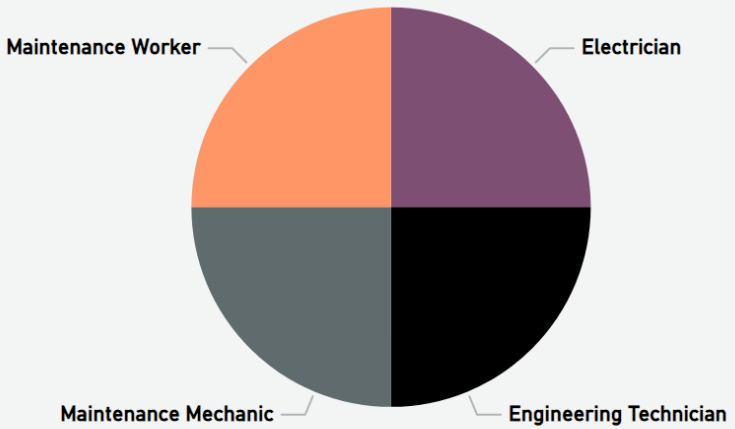
ESTIMATED COST

$288M TO $390M

RECOMMENDATIONS BY TYPE



NEW POSITIONS REQUIREMENTS
AMISTAD DAM



STUDIES

Study	Fiscal Year
Sliding & Overturning Analysis	FY28
Risk Assessment	FY28
Arc Flash Study	FY26

TRAINING

Required Training	No.
Concrete Inspection	1
Dam Inspections	1
Electrical Safety	1
Instrumentation & Accuracy of Results	1
Safety of In-service Dams	1
Sewage Spills & Safety & Health	1
Steel Inspection	1
Total	7

MAJOR O&M WORK PLAN

Priority	Work Type	Fiscal Year
1	Radial Gate Cable Tension	FY25
1	Radial Gate Trunnion Friction	FY25
2	Gate Sandblast & Repaint	FY25
4	Repair Concrete on Deck	FY27

CAPITAL PLAN

Priority	Work Type	Fiscal Year
1	Continue Treatment of New Sinkholes	FY24
1	Evaluation of New Sinkholes	FY24
1	Geophysical Study on New Sinkholes	FY24
2	Cutoff Wall Design	FY24
1	Penstock #4 Plugging	FY25
1	Penstock #5	FY25
3	Cutoff Wall Construction	FY25
3	Evaluation of the Gradation for the Material for Treating Sinkholes & Purchase more Material	FY28
4	New Bulkhead	FY28
6	Remove and Replace all 28 International Buoys	FY29
6	Remove Stilling Basin Debris from Crance Accident	FY29

LEGEND:
GOCI=GATE OPERABILITY & OPERATION INSPECTION
GEOR=GEOTECHNICAL RECOMMENDATION
GENR= GENERAL RECOMMENDATION
HYWBR= HIGHWAY BRIDGE RECOMMENDATION
PENGATE=PENSTOCK GATE

FALCON DAM 5-YEAR INSPECTION SUMMARY

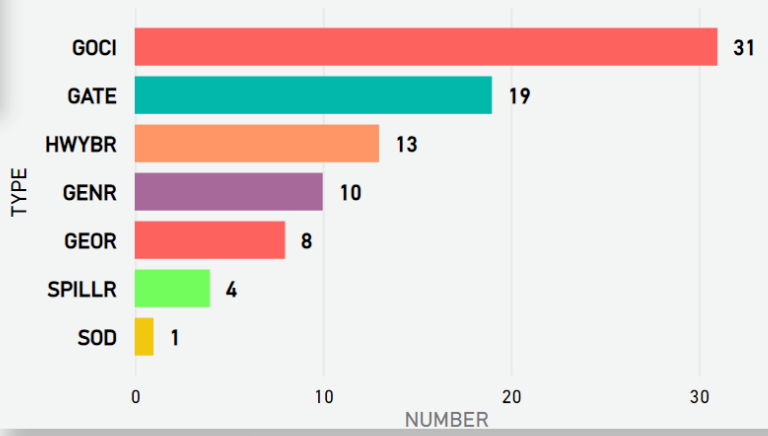
NO. OF RECOMMENDATIONS

86

ESTIMATED COST

$6M
TO
$10M

RECOMMENDATIONS BY TYPE



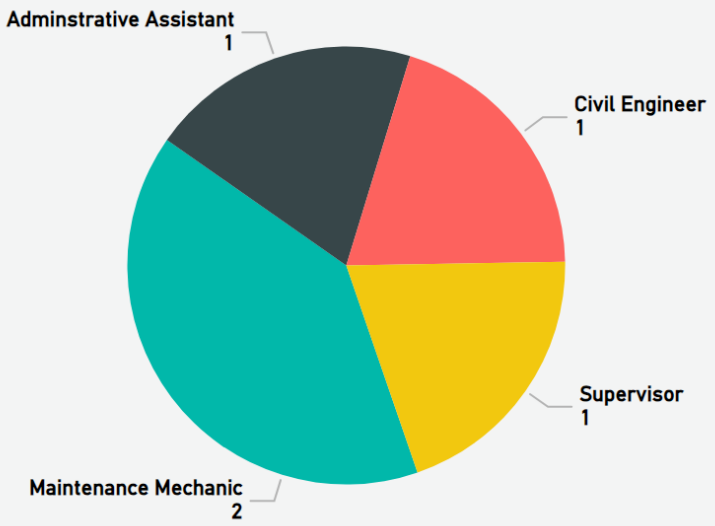
MAJOR O&M WORK PLAN

Priority	Work Type	Fiscal Year
2	Gates Maintenance (sand blast and paint)	FY25
3	Steel Repairs (metal rails, corroded nuts on bearing anchors, rivets)	FY26
3	Concrete Repairs (critical spalling and cracks)	FY27

CAPITAL PLAN

Priority	Work Type	Fiscal Year
3	45-Ton Spillway Crane Elec Contol Rehab	FY28
6	New Bulkhead	FY27
6	Replace Dam Elevator	FY29
3	Replace Raw Water Intake Piping	FY26
3	Replace Spillway Control Panels for each Gate	FY28
2	Spillway Joint & Spall Rehab	FY25

NEW POSITIONS REQUIREMENTS
FALCON DAM



STUDIES

Type of Study	Fiscal Year
Bathymetric Survey	FY25
H&H	FY29
Spillway Assessment	FY25
Stagnation Pressure Analysis	FY28
Wall Stability Analysis	FY28

TRAINING

Required Training	No.
Concrete Inspection	1
Dam Inspections	1
Electrical Safety	1
Instrumentation & Accuracy of Results	1
Safety of In-service Dams	1
Sewage Spills & Safety & Health	1
Steel Inspection	1
Total	7

LEGEND:
GOCI=GATE OPERABILITY & OPERATION INSPECTION
GATE=GATE
HYWBR= HIGHWAY BRIDGE RECOMMENDATION
GENR= GENERAL RECOMMENDATION
GEOR=GEOTECHNICAL RECOMMENDATION
SPILLR=SPILLWAY RECOMMENDATION
SOD=SAFETY OF DAMS

ANZALDUAS DAM 5-YEAR INSPECTION SUMMARY

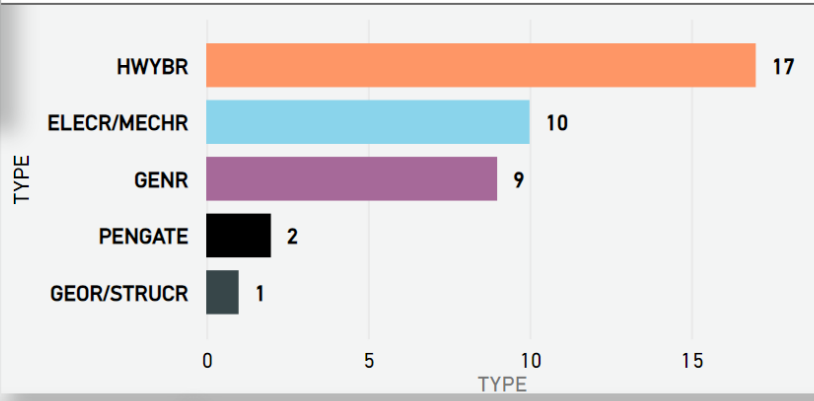
NO. OF RECOMMENDATIONS

39

ESTIMATED COST

$7M
TO
$10M

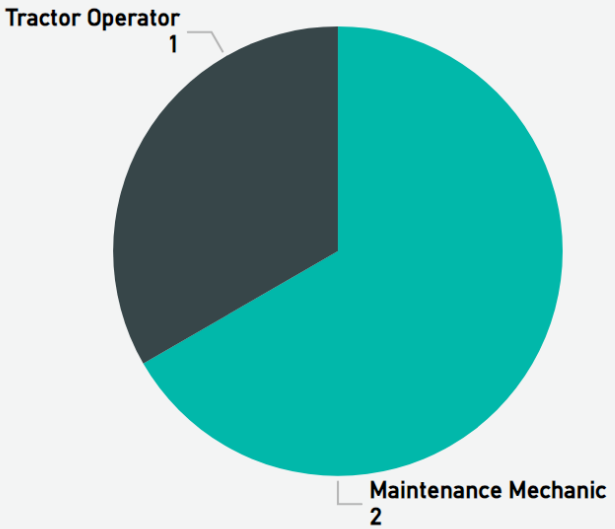
RECOMMENDATIONS BY TYPE



MAJOR O&M WORK PLAN

Priority	Work Type	Fiscal Year
3	Concrete Repairs (apply water repellent, joints, and substructure)	FY25
3	Gate Maintenance	FY26
3	Steel (replace sleeve nut on Span 5, skin plate, and bracing of apron)	FY26

NEW POSITIONS REQUIREMENTS
ANZALDUAS & RETAMAL DAM



STUDIES

Study Type	Fiscal Year
Potamologic Study and H&H from Falcon Dam to Gulf of Mexico	FY28
Rio Grande and floodways Sediment Removal Study	FY28
Scour Survey Study	FY28
Topobathymetric Study	FY28
Underwater Inspection	FY28
Value Engineering Analysis	FY25

TRAINING

Required Training	No.
Concrete Inspection	1
Dam Inspections	1
Electrical Safety	1
Instrumentation & Accuracy of Results	1
Safety of In-service Dams	1
Sewage Spills & Safety & Health	1
Steel Inspection	1
Total	7

CAPITAL PLAN

Priority	Work Type	Fiscal Year
2	Replace Pier Curtain Roller & Electric Motor	FY18
2	Gate Track Bolt Rehab	FY25
3	New Electrical System under Bridge	FY27
3	Replace Breaker Panel & All Electrical System	FY27
3	Replace Cathodic Protection (installation only)	FY27
4	New Emergency Generator for Building	FY27
3	Replace Gate Seals	FY28

LEGEND:
HWYBR=HIGHWAY BRIDGE RECOMMENDATION
ELECR/MECHR=ELECTRICAL RECOMMENDATION/MECHANICAL RECOMMENDATION
GENR=GENERAL RECOMMENDATION
PENGATE=PENSTOCK GATE
GEOR/STRUCR=GEOTECHNICAL RECOMMENDATION/STRUCTURAL RECOMMENDATION

RETAMAL DAM 5-YEAR INSPECTION SUMMARY

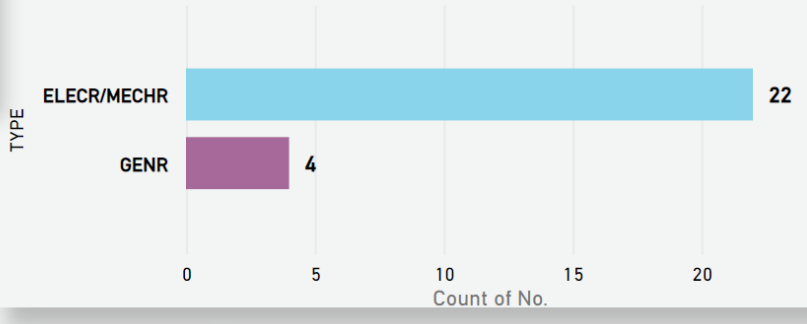
NO. OF RECOMMENDATIONS

26

ESTIMATED COST

$4M
TO
$6M

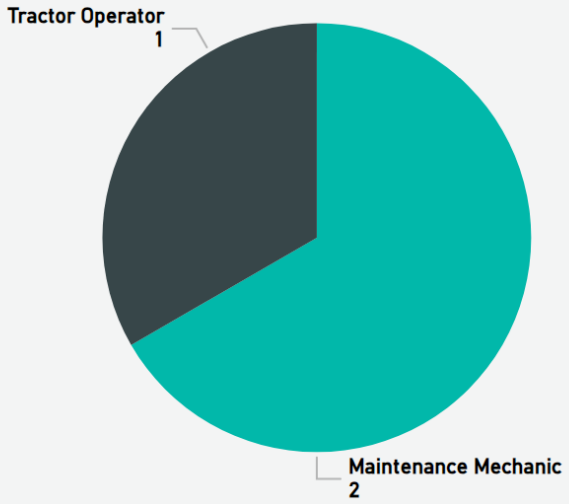
RECOMMENDATIONS BY TYPE



MAJOR O&M WORK PLAN

Priority	Type of Work	Fiscal Year
3	Radial Gate Maintenance (gate track system, corrosion, bolts, etc.)	FY26
4	Repair or Replace Radial Gate Manual Controls	FY27

NEW POSITIONS REQUIREMENTS
RETAMAL & ANZALDUAS DAM



STUDIES

Study	Fiscal Year
Potamologic Study and H&H from Falcon Dam to Gulf of Mexico	FY28
Rio Grande and floodways Sediment Removal Study	FY28
Scour Survey Study	FY28
Topobathymetric Study	FY28
Underwater Inspection	FY28

TRAINING

Required Training	No.
Concrete Inspection	1
Dam Inspections	1
Electrical Safety	1
Instrumentation & Accuracy of Results	1
Safety of In-service Dams	1
Sewage Spills & Safety & Health	1
Steel Inspection	1
Total	7

CAPTIAL PLAN

Priority	Work Type	Fiscal Year
1	Center Gate Rehab	FY24
1	Mod 1 - Center Gate Electrical Upgrades	FY25
4	New Cathodic Protection	FY27
3	New Drains Upstream & Downstream in the Retaining Walls (Each Abutment)	FY28
5	New Emergency Generator	FY26

LEGEND:
GENR=GENERAL RECOMMENDATION
ELECR/MECHR=ELECTRICAL RECOMMENDATION/MECHANICAL RECOMMENDATION

IBWC HYDROELECTRIC POWER PLANTS

- Amistad Dam
  - Completed in 1983
  - Located in Val Verde County, Texas
  - Two – 33 MW Francis Turbine Generator Units
  - Condition is Good Overall (USACE)
- Falcon Dam
  - First Commercial Generated Power in 1954
  - Located in Starr County, Texas
  - Three – 10.5 MW Francis Turbine Generator Units
  - Condition is Fairly Good Overall (USACE)

IBWC HYDROELECTRIC POWER PLANTS

- Amistad & Falcon
  - NERC (Federal) & ERCOT (State) Regulated
- 10-Year USACE INSPECTIONS
  - USACE Inspection - July 2024
  - Electrical Generator Equipment & Systems
  - Mechanical Power Generation Equipment
  - Electrical Power & Control Systems
  - Mechanical Support Equipment & Systems
  - Structural Features

Condition Index (CI)	Condition Equipment Rating	Definition
8 ≤ Index ≤ 10	Good	There is a high level of confidence that the component will perform well under normal operating conditions. Continue current O&M practices. Repeat condition assessment on normal frequency. Consider performing Tier 2 tests when convenient to provide good base line data for comparison with future tests.
6 ≤ Index <8	Fair	There is a medium level of confidence that the component will perform well under normal operating conditions. The component may require additional investigations to confirm adequacy. Continue current O&M practices, minimal restrictions to operation and/or minor maintenance may be necessary. Repeat condition assessment on normal frequency. Consider performing Tier 2 tests to provide further insight into equipment condition and adjust Condition Index score, as necessary.
3 ≤ Index <6	Marginal	There is a low level of confidence that the component will perform well under normal operating conditions. The component requires additional investigation to confirm adequacy. Restricted operation and/or non– routine maintenance is necessary. Perform applicable Tier 2 tests and adjust Condition Index score, as necessary. Consult with technical specialists. Repeat condition assessment more frequently.
0 ≤ Index < 3	Poor	The component does not perform well under normal operating conditions. Physical signs of serious damage or deterioration are present. Significant restrictions to operation and/or extensive non–routine maintenance is necessary. Perform immediate Tier 2 testing and adjust Condition Index score, as necessary. Consult with technical specialists. Repeat condition assessment more frequently.

Amistad Dam Field Office

OVERVIEW

1. *2024 Accomplishments*
2. *HER Acquisitions*
3. *Inspections: Dam, Powerplant, Underwater*
4. *USACE Inspection Recommendations*
5. *2025 Capital Projects*
6. *2025 Deferred Maintenance Projects*
7. *2025 In-House Work*
8. *2025 Powerplant Captial / Maintenance Projects*
9. *2025 Flood Preparedness*

Amistad Dam Infrastructure

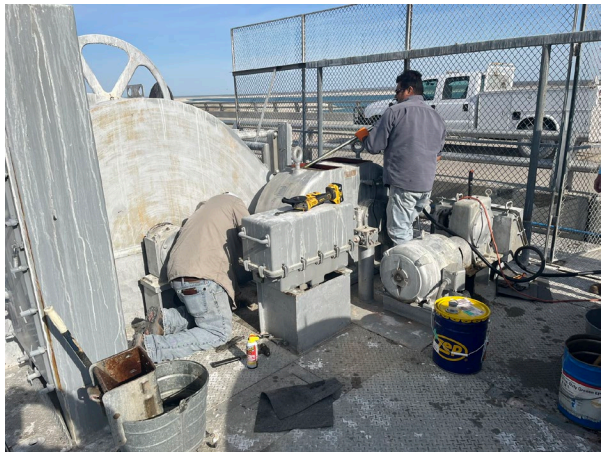
1. *Power Plant (2 Generators)*
2. *Dam Concrete Section & Control Building*
3. *(4) Miles Dam Embankment*
4. *(8) Radial (Tainter) Gates*
5. *(8) Stoplogs at Radial Gates*
6. *(5) Penstocks*
   - *(4) Headgates (Roller Slide)*
   - *(2) Irrigation Gates: 1 Hydraulic & 1 Roller Slide*
   - *(1) Bulkhead Gate*
7. *(5) Admin. & Warehouse Buildings*
8. *(6) Gov.'t Rental Housing*
9. *Water Storage Tank*
10. *21 Hydrological Gauging Stations & 15 Wells*
11. *(28) International Reservoir Buoy's*
12. *(4) Demarcation Boundary Markers on Bridges*

2024 Accomplishments

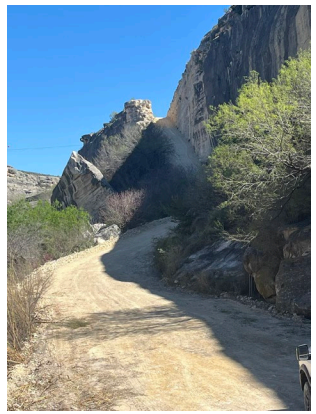
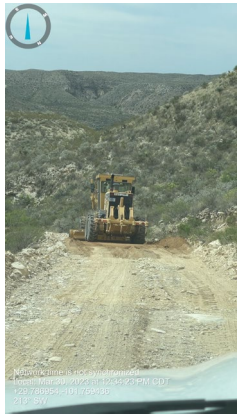
- **Implemented repairs and replacements based on the U.S. Army Corps of Engineers' (USACE) five-year inspection recommendations,**
- **Completed major inspections and routine maintenance on the Power Plant at Generator #1, turbine pit, wicket gates, penstock, headgate and hoist, exciters 1 and 2, and control panels.**
- **Performed maintenance on water conveyances projects, including 50 miles of hydrologic gauging station roadwork and 25 acres of vegetation removal under cableways.**
- **Contracted detailed inspections of all structural, mechanical, electrical, and geotechnical parts of the dam and power plant, and used the Bureau of Reclamation dive team to check the upstream and downstream portions of the dam and plant.**
- **Ongoing rehabilitation of the Power Plant, to include sandblasting, epoxy repairs, and painting of the wicket gates, spiral case, draft tube, and the runner cone on Generator #1. Replacement of the wicket gate seals on Generator #1 will also be completed, followed by Generator #2.**
- **Completed the replacement and restoration of international boundary demarcation pavement markers and/or plaques at ports of entry at International Dam, Del Rio International Bridge, Eagle Pass International Bridge 1, and Eagle Pass International Bridge 2, in accordance with international agreements.**
- **Performed maintenance of buoys, including cleaning and replacement of lighting devices and associated batteries. The team also recovered four detached buoys.**
- **Controlled vegetation on 75 acres around the field office.**

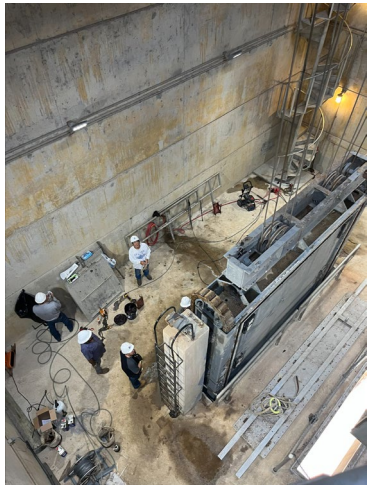
Heavy Equipment Replacement for Amistad Field Office

2024 Accomplishments



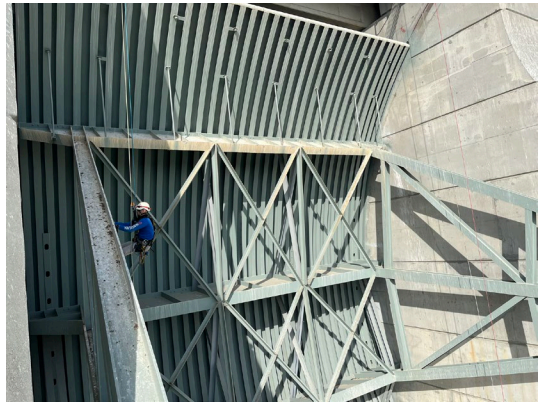






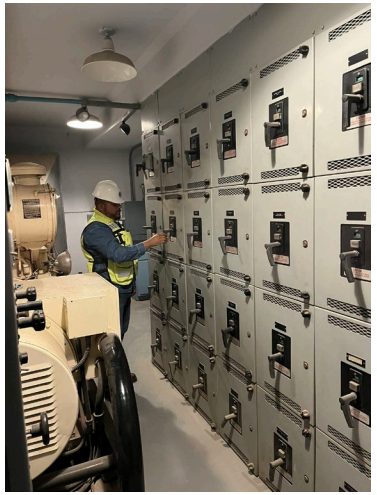

AMISTAD

Amistad Dam 5 Year Dam Inspection

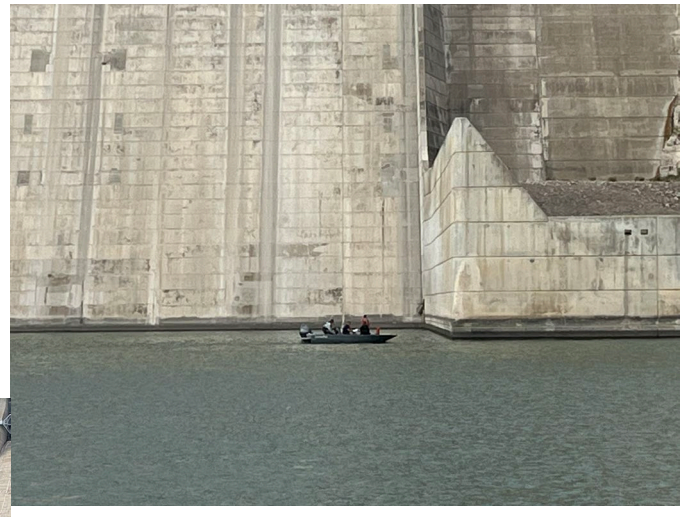


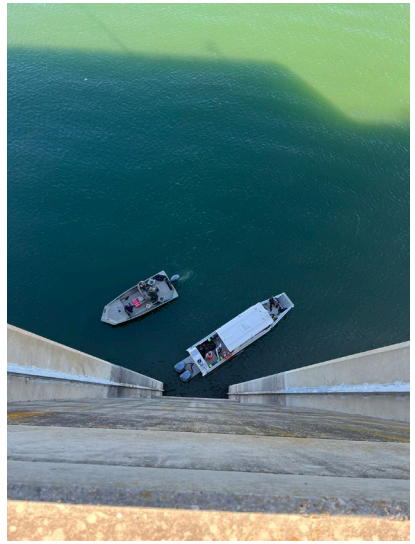




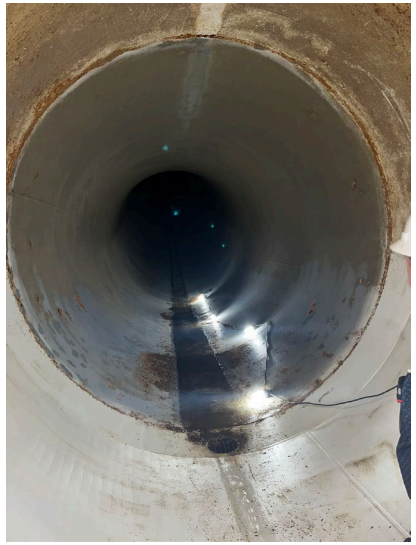



Amistad Dam and Powerplant Underwater Inspection





Powerplant Inspection



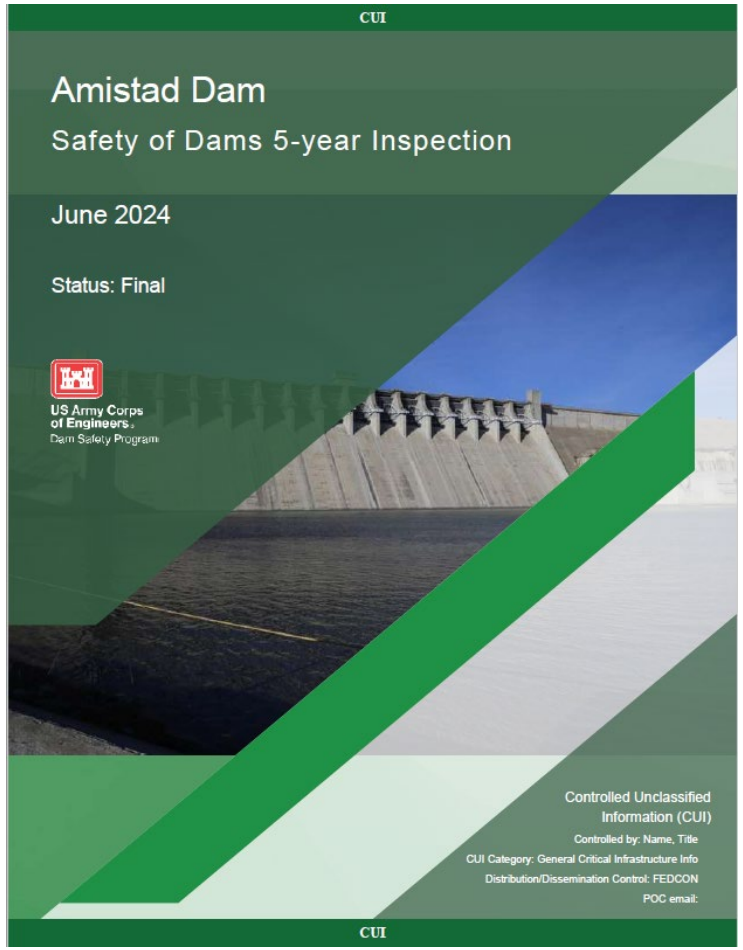
USACE 5 Year Recommendations

Critical Recommendation:

1. **Radial Gate Rope cable tensioning**
2. **Radial Gate Trunnion Pin Lubrication**
3. **Radial Gate 1 grease line reconnection. (Completed)**

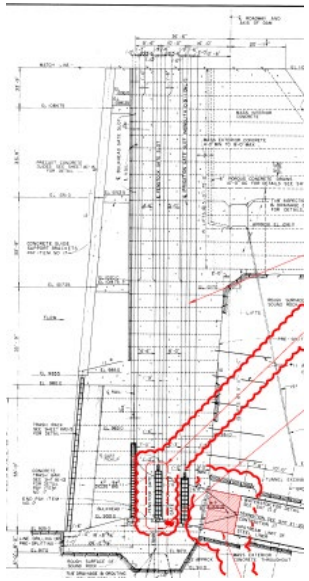
Urgent Action:

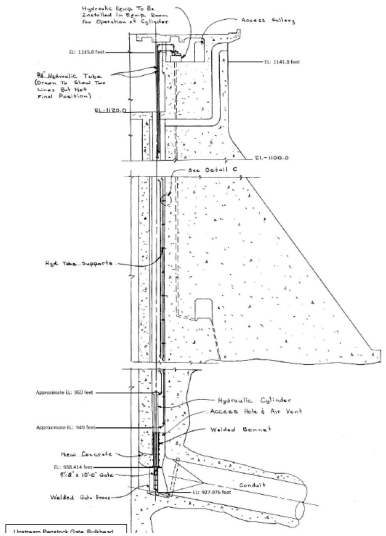
1. **Evaluate, design, establish a procedure and execute corrective actions for sinkholes found during inspection. (Completed)**



2025 Dam Capital Projects (Contractor)

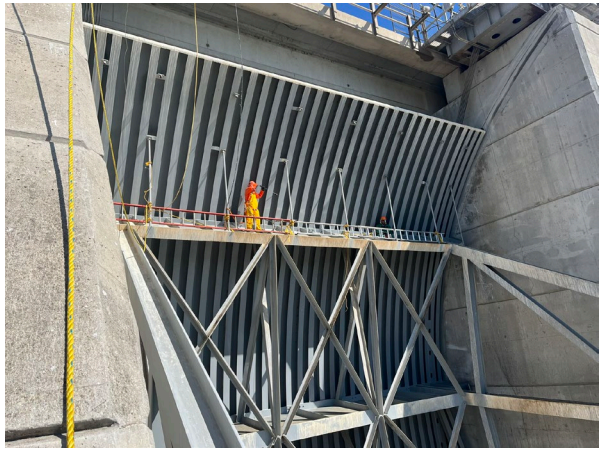
1. **Penstock 4 Concrete Plug**
2. **Penstock 5 Irrigation Gate Repair**
3. **Radial Gates Electrical Panel Upgrade**





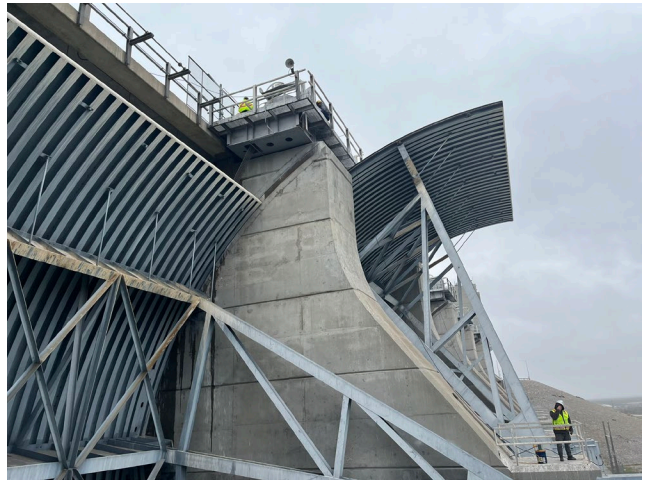
2025 Dam Deferred Maintenance Projects (Contractor)

1. **Radial Gates Sandblast and Painting**
2. **Radial Gate Seal Replacements**
3. **Radial Gate Anode Replacements**
4. **Radial Gate Cable Tensioning**



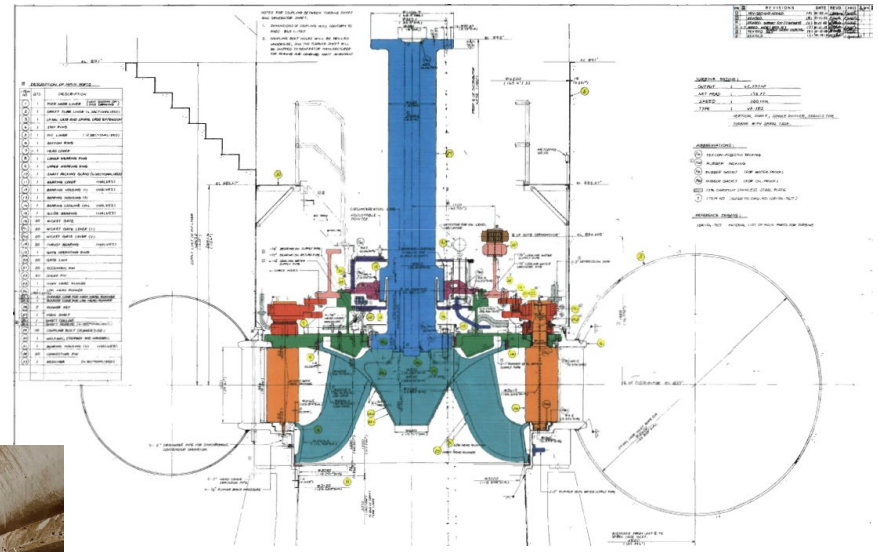
2025 Dam In-house Projects

1. Radial Gates Mechanical Hoistway Components Rehabilitation
2. Radial Gates Trunnion Pin Inspection and Lubrication
3. Radial Gates U-bolt Inspection and Lubrication
4. Continue with routine maintenance
5. Continue with roadwork and vegetation removal at hydro gauging stations.
6. Continue with buoy maintenance
7. Continue with boundary demarcation markers maintenance.



2025 Powerplant Capital Projects

1. **Sandblast and repaint Runner Cone and Wicket Gate Seal Replacement for Generator #2.**



2025 Flood Preparedness

1. **2025 Binational Flood Work shop (Tentative May 13th to May 16th)**
   - **Amistad Dam May 13th**
   - **Falcon Dam May 14th**
   - **Anzalduas and Retamal May 15th**
2. **2025 Emergency Action Plan Meeting with local stakeholders**
   - **May 12th in Del Rio, TX. (Tentative)**
3. **2025 Flood Warning Notices**
   - **Distribute and posted in April**